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Valve Catalog no. 175 Allied Control Division

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 **GOULD**

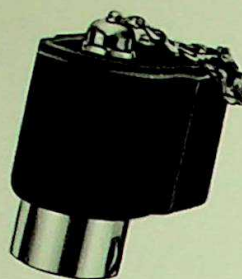
Solenoid Valves



**"O" SERIES
STRAP HOUSING**



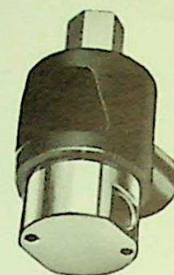
**"1" SERIES
4-WAY NC/NC**



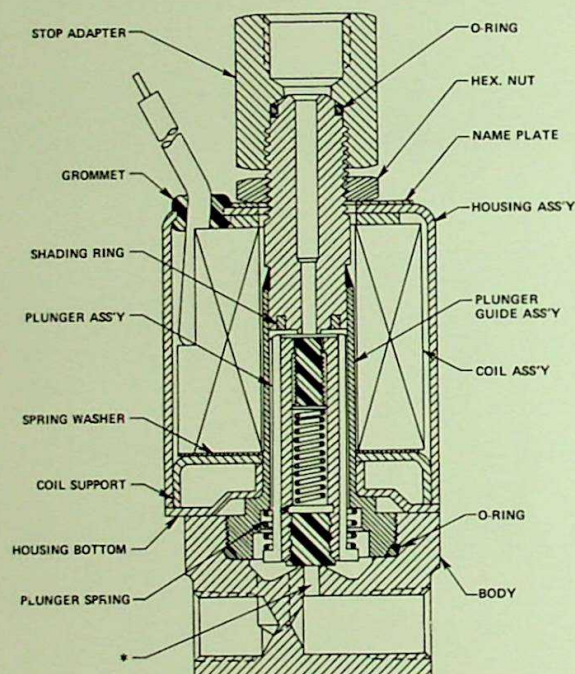
**"O" SERIES
JIC HOUSING**



**"1" SERIES
OPERATOR**



**"O" SERIES
EXPLOSION-PROOF
HOUSING**



Allied Control offers a wide selection of 2, 3 and 4-way Solenoid Valves to meet most application requirements. Reliability and quality performance are inherent in these designs. Seat materials such as Butyl, EPT, Hypalon, Kel-F, Teflon and Fluorocarbon enable control of a variety of

media ranging from acetylene to water and including blood, ethylene glycol and steam. Allied Control Solenoid Valves are 100% tested, packless type valves that can be serviced without removing the valve from the line.

NOTE: FOR "DEAD END SERVICE" APPLICATIONS CONSULT FACTORY

Features

- * Orifice seats machined as part of body-guaranteeing leakproof internal structure
- Operating ambient temperatures from -45°F to +275°F - Class "A" to Class "C" coils.
- U.L. approved explosion proof housings
- Automotive approved solenoid housings
- Compensating (spring loaded) top seats available in "O" Series & standard in "2" Series and "8" Series.
- Pipe sizes from 1/8" NPTF to 1/2" NPTF
- Molded & potted coils for moisture resistant applications
- Coil voltages from 6-440V A.C. 50 & 60Hz and 6-220V D.C.
- Design & Engineering capabilities for unique applications
- Nationwide distribution & stocking (see back cover)

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LIST OF REPRESENTATIVES/DISTRIBUTORS	Inside Back Cover
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1. **ORDERS** All orders are subject to acceptance at the home office of Allied Control. Changes in specifications and drawings are subject to acceptance in the same manner as an original order. All such changes are the responsibility of the Purchaser, and Allied Control is to be reimbursed for all costs and materials which cannot be used because of such changes, or because of the cancellation of any order in whole or in part.
2. **SPECIAL ORDERS** By ordering goods made to individual specifications, the Purchaser undertakes to indemnify and hold Allied Control harmless from all expense or loss resulting from alleged or actual patent infringement in the manufacture and sale of such goods.
3. **PRICES** Quotations automatically expire 30 days from date issued. Prices are subject to change without notice. Goods will be invoiced at prices in effect at time of shipment, except that in no case will amount of increase exceed 10%. All prices are FOB point of manufacture and are net of taxes, but all sales are made subject to any applicable taxes.
4. **DISCOUNTS: SHIPMENT IN INSTALLMENTS** Quantity discounts will be granted per schedule in effect at time of shipment. Dis-similar goods may not be combined for quantity discount purposes. Orders may be placed calling for installment shipments to take advantage of maximum discounts. Shipment of the goods covered by any installment order must be scheduled within a one year period. Failure to accept delivery of the full quantities involved in such orders will result in Allied Control invoicing the Purchaser for the difference in quantity discounts plus any applicable cancellation fees. When an order is accepted for delivery of goods in installments, Allied Control may complete the manufacture of the entire quantity of ordered goods at any time, and shall thereupon be deemed to have performed all of its obligations under the order, subject to making delivery of goods as specified. Upon any default by the Purchaser after such completion of manufacture, the balance of the entire purchase price remaining unpaid shall immediately become due.
5. **CANCELLATION** Except for standard parts any obsolete, inactive or special material will be the responsibility and liability of the Purchaser.
6. **TERMS** 1% ten days. Net thirty days.
7. **MINIMUM BILLING** \$50.00 net.
8. **SHIPPING** When shipping instructions are not given, goods will be shipped best way. Allied Control will not be responsible or liable for default or delay in shipping due to causes beyond its control. Shipping dates as furnished are only approximate, and may be extended for a reasonable period. All claims for loss, breakage and damage must be made to carrier.
9. **DESIGN; TOOLS AND DIES** Outline drawings as shown in catalog are dimensionally correct, but Allied Control assumes no responsibility if variation should occur, and reserves the right to change design without notice. Tools and dies embody Allied Control's design. As any charge made for tools and dies represents only a portion of their cost, Allied Control retains title to them, and all rights to their possession.
10. **LAWS AND REGULATIONS** Allied Control manufactures and sells goods in accordance with federal, state and local laws, but assumes no responsibility or liability for laws, regulations, duties or taxes as imposed by any foreign country.
11. **RETURNED GOODS** No goods will be accepted for return to the Seller unless authorized in writing by an officer of Allied Control.

Warranty

Seller warrants its products to be free from defects in material and workmanship under normal use and service for a period of one (1) year from the date of shipment from Seller's factory. Any defect discovered after the warranty period has expired will be deemed to be outside the coverage of the warranty.

Upon discovery of a defect or a shortage of an item received in manufacturer's original container, Purchaser shall, within ten (10) days from discovery of the defect or shortage, deliver written notice, detailing the basis of the claim, to Seller's main office, 100 Relay Road, Plantsville, Connecticut 06479. If after due investigation the claim is found to be valid by Gould, Gould may discharge its entire obligations to Purchaser by either repairing or replacing, f.o.b. point of manufacture, the defective product or components thereof and for shortages by furnishing a replacement of the missing quantity.

THIS EXPRESS WARRANTY SUPERSEDES AND IS IN LIEU OF ALL OTHER REMEDIES AND WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, AND LIABILITY FOR NEGLIGENCE. IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL LOSSES, EXPENSES OR DAMAGES.



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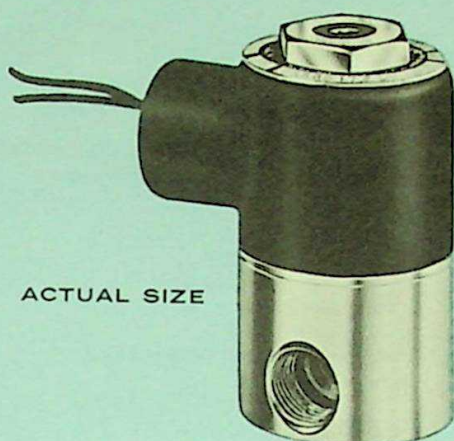
ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

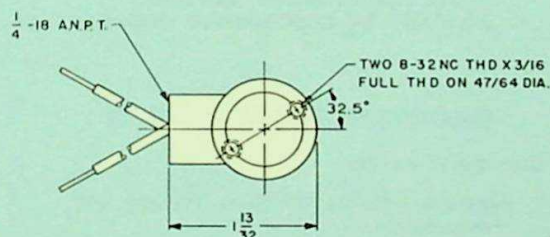
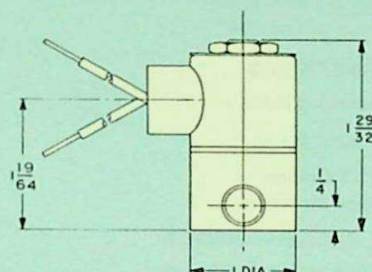
"1" SERIES

2 WAY NORMALLY CLOSED SOLENOID VALVE

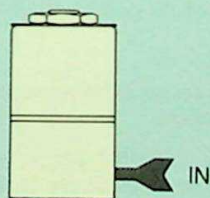
TYPE
213



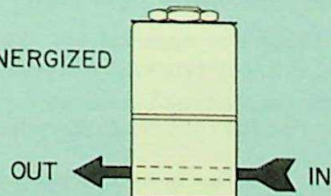
ACTUAL SIZE



UNENERGIZED



ENERGIZED



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 800

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel

Orifice Diameter: $\frac{1}{32}$ in. to $\frac{1}{8}$ in.

Porting: $\frac{1}{8}$ in. NPTF

Housing: $\frac{1}{4}$ in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 213		2 WAY NORMALLY CLOSED			"1" SERIES	
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C	D-C
21301	21381	$\frac{1}{8}$ in.	$\frac{1}{32}$ in.	.019	800	800
21302	21382	$\frac{1}{8}$ in.	$\frac{3}{64}$ in.	.046	400	400
*21303	*21383	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	.080	300	125
21304	*21384	$\frac{1}{8}$ in.	$\frac{3}{32}$ in.	.170	150	45
21305	21385	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.	.240	50	15

*Indicates valves stocked locally by Allied distributor.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "I" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
BODY	
BB	Brass Body
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BF	Brass with 1/16" NPTF
METERING	
MB	Metering Bottom
HOUSING	
HA	1/2" Conduit
HB	Strap Housing
MISCELLANEOUS	
U	Underwriters' Approval
USE PREFIX WHEN ORDERING AND LIST IN CONSECUTIVE ORDER	

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 21381 120-VAC 60-cycles
which designates a 2-way Normally-Closed valve with 1/32 in. Orifice, 1/8 in. NPT Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMB-21381 120/60
Same as example No. 1 except:
Molded Coil, Brass Body,
Bottom Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-21381 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-21381 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing or a special slotted housing.

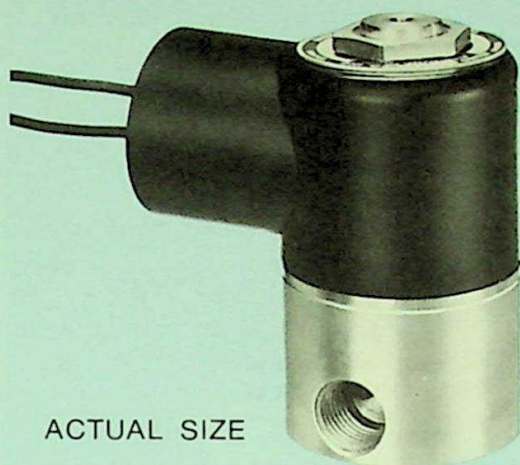
For Application Assistance, Please Use Questionnaire on page 91.

"8" SERIES

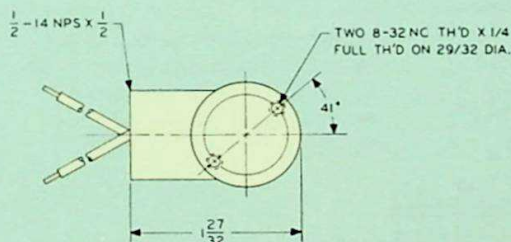
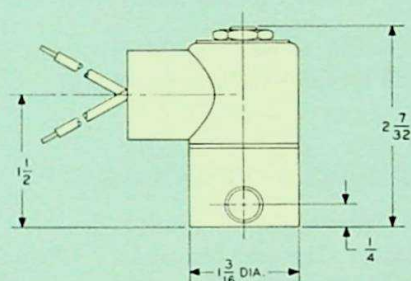
2 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE

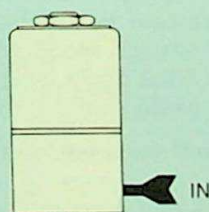
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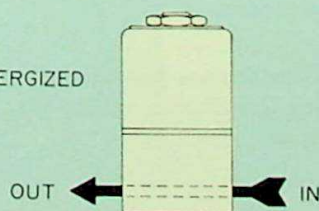
ACTUAL SIZE



UNENERGIZED



ENERGIZED



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
 Standard; 0 to 400
Burst Pressure: 6000psi
Leakage: Standard; bubble tight
Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
 Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard: Brass
Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{8}$ in.
Porting: $\frac{1}{8}$ in. NPTF
Housing: $\frac{1}{2}$ in NPS Conduit or Grommet
Weight: 8.0 ounces maximum

TYPE 283		2 WAY NORMALLY CLOSED			"8" SERIES	
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C	D-C
28301	28381	$\frac{1}{8}$ in.	$\frac{3}{64}$ in.	.05	400	400
28302	28382	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	.12	350	250
28303	28383	$\frac{1}{8}$ in.	$\frac{3}{32}$ in.	.20	175	100
28304	28384	$\frac{1}{8}$ in.	$\frac{7}{64}$ in.	.25	150	80
28305	28385	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.	.30	90	50

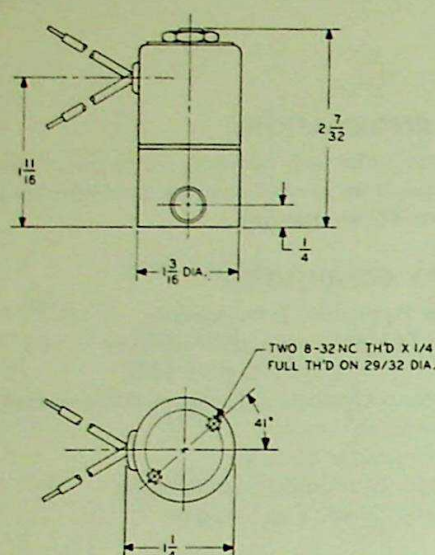


GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil

Body

- BX Stainless Steel Body
- BD Bottom Outlet (Body)
- BE Bottom Inlet (Body)
- BF Brass with $\frac{1}{8}$ " NPTF

METERING

- MS Side Metering

HOUSING

- HB Strap Housing
(Not initially available)

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 28381 120-VAC 60-cycles which designates a 2-way Normally-Closed valve with $\frac{3}{64}$ in. Orifice, $\frac{1}{8}$ in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BXMS-28381 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body, and Side Metering.

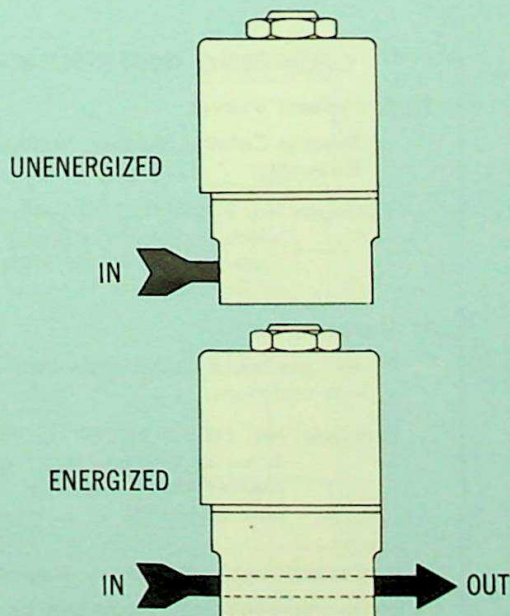
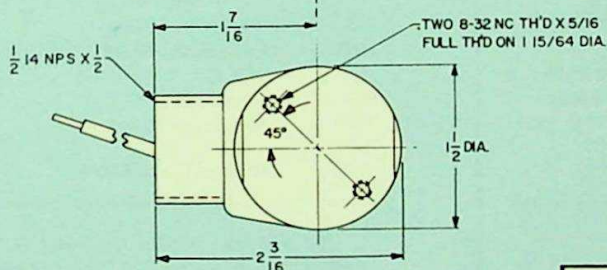
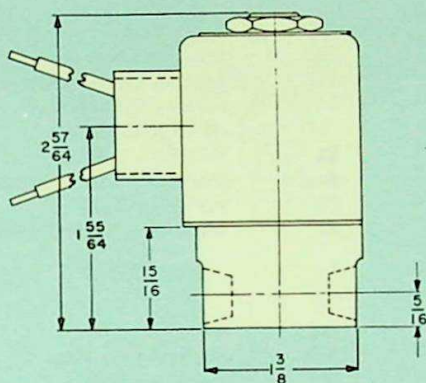
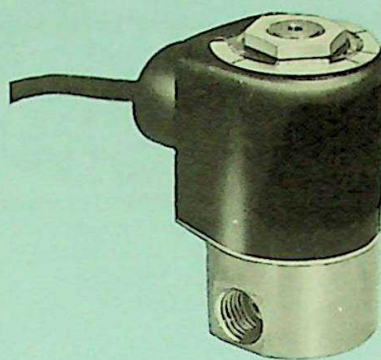
Specify vacuum if valves are to be used on VAC.

- * Can only be supplied with an open strap housing.

For Application Assistance
please use Questionnaire, page 91.

2 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE
203



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line. U.L. approval on all standard types, and most optional variations.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 400
Special; to 1000

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+180^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: $\frac{3}{4}$ in. to $\frac{1}{4}$ in.

Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 6 ounces

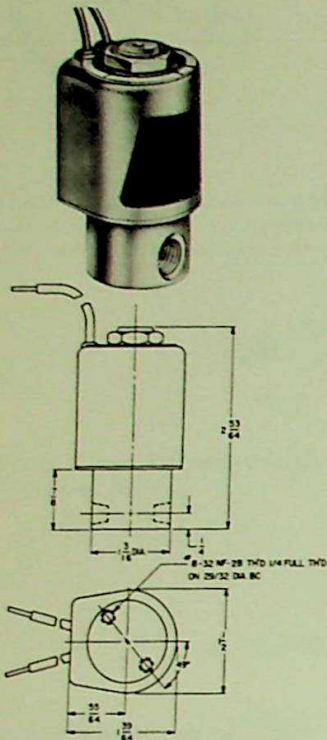
TYPE 203		2 WAY NORMALLY CLOSED		"O" SERIES		
CATALOG NO. CONDUIT HOUSING	CATALOG NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL AC	MAXIMUM OPERATING PRESSURE DIFFERENTIAL DC
20301	20381	$\frac{1}{8}$ in.	$\frac{3}{4}$	0.05	400	400
20302	20382	" "	$\frac{1}{16}$	0.12	275	275
20303	20383	" "	$\frac{3}{32}$	0.21	175	140
*20304	20384	" "	$\frac{1}{8}$	0.32	135	80
20305	20385	" "	$\frac{5}{32}$	0.50	90	45
20306	20386	" "	$\frac{3}{16}$	0.60	75	20
20307	20387	" "	$\frac{1}{4}$	0.85	40	10
20311	20391	$\frac{1}{4}$ in.	$\frac{3}{4}$	0.05	400	400
20312	20392	" "	$\frac{1}{16}$	0.12	275	275
20313	20393	" "	$\frac{3}{32}$	0.21	175	140
*20314	20394	" "	$\frac{1}{8}$	0.32	135	80
*20315	20395	" "	$\frac{5}{32}$	0.50	90	45
20316	20396	" "	$\frac{3}{16}$	0.60	75	20
*20317	20397	" "	$\frac{1}{4}$	0.85	40	10

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$ *Indicates valves stocked locally by Allied distributor. Explosion Proof Housing also available from distributors.

GOULD ALLIED CONTROL
Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE BM-203

2-WAY NORMALLY-CLOSED
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 203 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

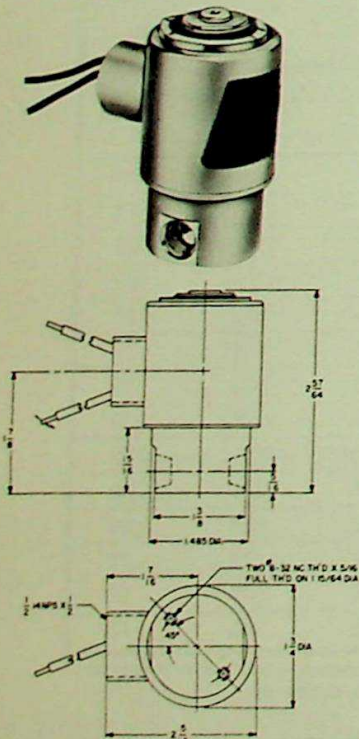
Orifice Diameter: 3/64 in. to 1/32 in.

Porting: 1/8 in. NPTF

Weight: 14 ounces (approx.)

TYPE HH-203

2-WAY NORMALLY-CLOSED
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 203 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H
Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps

Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-203

NOISELESS AC OPERATION

2-WAY NORMALLY-CLOSED RECTIFIED COIL

Characteristics: Same as std. type 203 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size	Average cv Factor	Max. Pressure PSI
3/64	0.05	300
1/16	0.12	200
3/32	0.21	150
1/8	0.32	125
5/32	0.50	100
3/16	0.60	65
1/4	0.85	10

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX

DESCRIPTION

COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded Rectified Coil
CR	

BODY

BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BH	Hexagonal Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless)

METERING

MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	J. I. C.
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

U	Underwriters' Approval
---	------------------------

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 20392 120-VAC 60-cycles which designates a 2-way Normally-Closed valve with 1/16 in. Orifice, 1/4 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMS-20392 120/60 Same as example No. 1 except: Molded Coil, Brass Body, Side Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-20392 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required, No. 1U-20392 120/VAC 60-cycles.

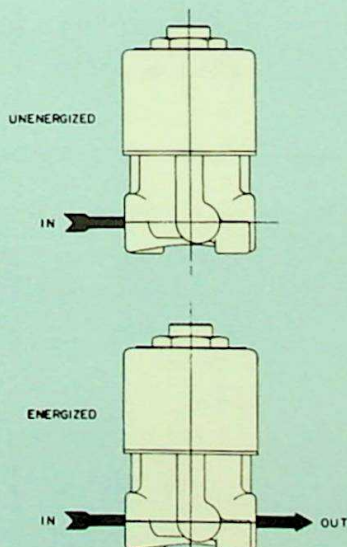
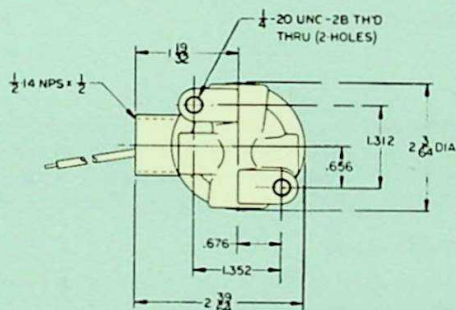
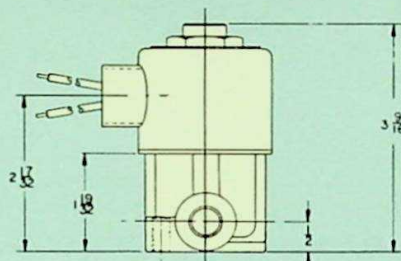
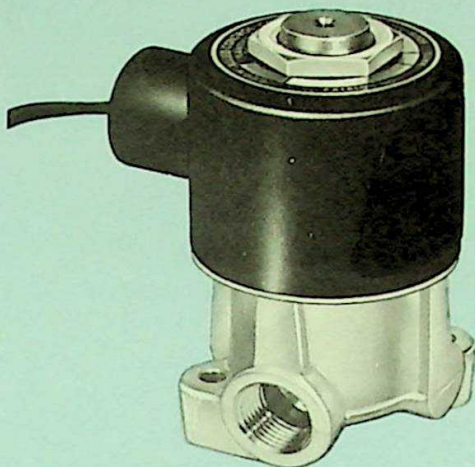
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"2" SERIES

2 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE
250



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard - 45°F to +185°F
(-43°C to +85°C)
Special - 60°F to +350°F
(-51°C to +177°C)

Maximum Operating Pressure Differential:

Standard; Vacuum to 750 psi
Special to 1000 psi

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
6 to 230 volts d-c

Ambient Temp: Standard; Max. +25°C For continuous duty
Special; To +200°C

Coil Construction: Standard; Class "A" to +110°C
Special; to +220°C

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: 1/16" to 3/8"

Porting: 1/4" NPTF & 3/8" NPTF

Housing: 1/2 in. NPS Conduit or Grommet

Weight: 2.5 lbs.

TYPE 250		2 WAY NORMALLY CLOSED			"2" SERIES	
CATALOG CONDUIT HOUSING	NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE CV FACTOR	MAXIMUM PRESSURE AC	OPERATING DIFFERENTIAL DC
25001	25081	¼ in.	⅛	.12	750	750
25002	25082	" "	⅜	.21	500	500
25003	25083	" "	⅝	.32	300	300
25004	25084	" "	⅞	.50	225	225
* 25005	25085	" "	1	.69	140	140
25006	25086	" "	1¼	.94	100	100
25007	25087	" "	1⅝	1.48	45	45
25008	25088	" "	1⅞	1.9	35	35
25011	25091	⅜ in.	⅛	.12	750	750
25012	25092	" "	⅜	.21	500	500
25013	25093	" "	⅝	.32	300	300
25014	25094	" "	⅞	.50	225	225
25015	25095	" "	1	.69	140	140
* 25016	25096	" "	1¼	.94	100	100
25017	25097	" "	1⅝	1.48	45	45
25018	25098	" "	1⅞	1.9	35	35

DIMENSIONAL TOLERANCES ON FRACTIONS ±1/4

*Indicates valves stocked locally by Allied distributor.



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.00	120	0.300
12	3.00	240	0.150
24	1.50	480	0.075
48	0.75		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps

Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil
	HOUSING
HR	Strain Relief

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 25018 120-VAC 60-cycles
which designates a 2-way normally
closed valve with $\frac{3}{8}$ in. Orifice, $\frac{3}{8}$ in.
NPTF Porting and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering
valves with variations.

Example: No. 1-25018 120/60
Same as example No. 1 except:
Class B Waterproof Coil

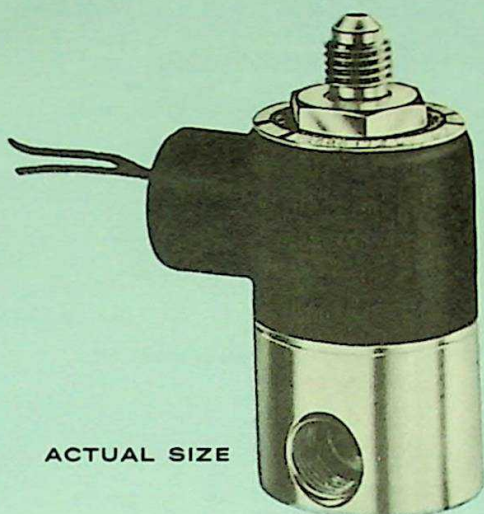
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire
on page 91.

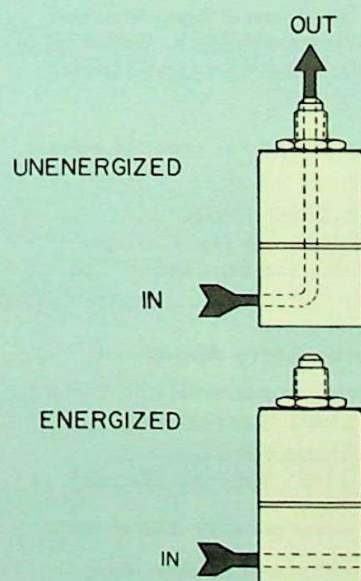
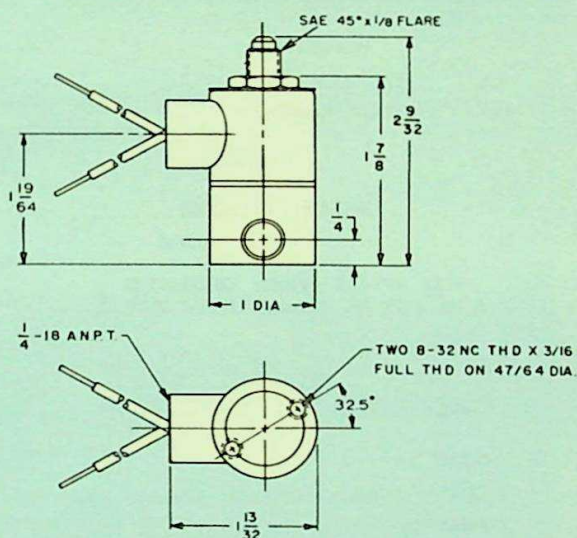
"1" SERIES

2 WAY NORMALLY OPEN SOLENOID VALVE

TYPE
214



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to +185°F
(-43°C to +85°C)

Maximum Operating Pressure Differential: Standard; 0 to 225

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. +25°C for continuous duty

Coil Construction: Standard; Class "A" to +110°C

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: 1/32 in to 1/16 in.

Porting: 1/8 in. NPTF

Housing: 1/4 in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 214		2 WAY NORMALLY OPEN		"1" SERIES		
CATALOG NO. CONDUIT HOUSING	CATALOG NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C	MAXIMUM OPERATING PRESSURE DIFFERENTIAL D-C
21401	21481	1/8 in.	1/32 in.	.019	225	225
*21402	21482	1/8 in.	3/64 in.	.046	150	150
21403	21483	1/8 in.	1/16 in.	.080		75

DIMENSIONAL TOLERANCES ON FRACTIONS ± 1/64

*Indicates valves stocked locally by Allied distributor.



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "I" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
BODY	
BB	Brass Body
BE	Bottom Inlet (Body)
BF	Brass with 1/16" NPTF
HOUSING	
HA	1/2" Conduit
HB	Strap Housing
MISCELLANEOUS	
U	Underwriters' Approval
USE PREFIX WHEN ORDERING AND LIST IN CONSECUTIVE ORDER	

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 21481 120-VAC 60-cycles
which designates a 2-way Normally-
Open valve with 1/32 in. Orifice, 1/8 in.
NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BB-21481 120/60
Same as example No. 1 except:
Molded coil, and Brass Body.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-21481 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-21481 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing or a special slotted housing.

For Application Assistance, Please Use Questionnaire on page 91.

"8" SERIES

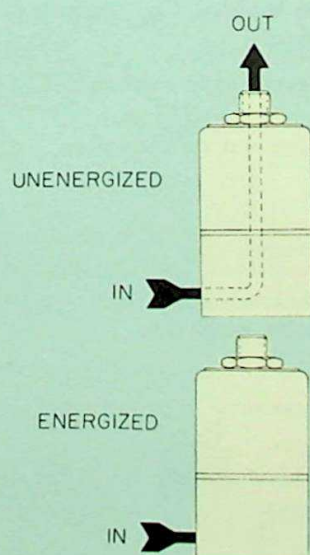
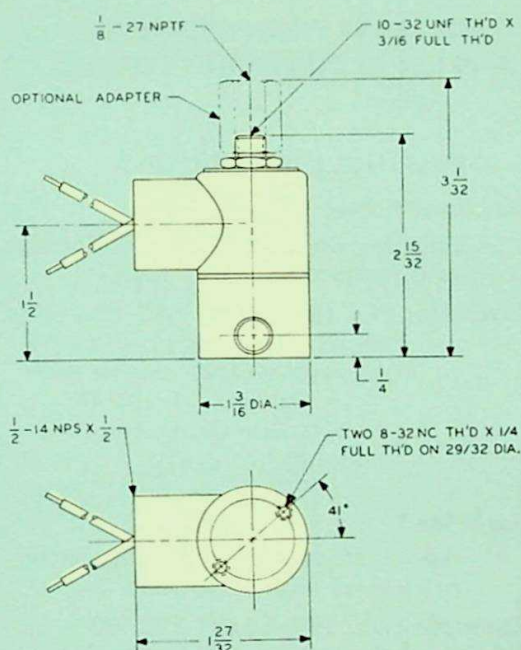
2 WAY NORMALLY OPEN SOLENOID VALVE

TYPE

284



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
 Standard; 0 to 300
Burst Pressure: 6000psi
Leakage: Standard; bubble tight
Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
 Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard: Brass
Orifice Diameter: $\frac{1}{32}$ in. to $\frac{1}{16}$ in.
Porting: $\frac{1}{8}$ in. NPTF
Housing: $\frac{1}{2}$ in NPS Conduit or Grommet
Weight: 8.0 ounces maximum
Compensating Plunger with Viton top seal: Standard

TYPE 284		2 WAY NORMALLY OPEN			"8" SERIES
CATALOG NO. CONDUIT HOUSING	NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C & D-C
28401	28481	1/8 in.	1/32 in.	.025	300
28402	28482	1/8 in.	3/64 in.	.05	200
28403	28483	1/8 in.	1/16 in.	.09	150

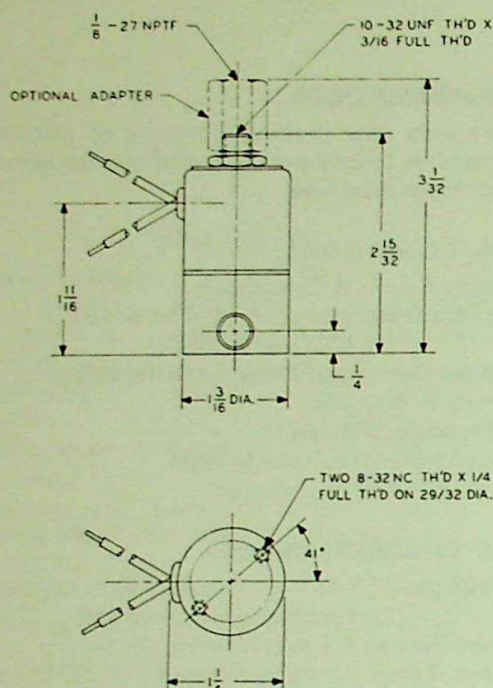


GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil

Body

- BX Stainless Steel Body
- BE Bottom Inlet (Body)
- BF Brass with $\frac{1}{16}$ " NPTF

HOUSING

- HB Strap Housing
(Not initially available)

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 28481 120-VAC 60-cycles which designates a 2-way Normally-Open valve with $\frac{1}{32}$ in. Orifice, $\frac{1}{8}$ in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BX-28481 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body.

Specify vacuum if valves are to be used on VAC.

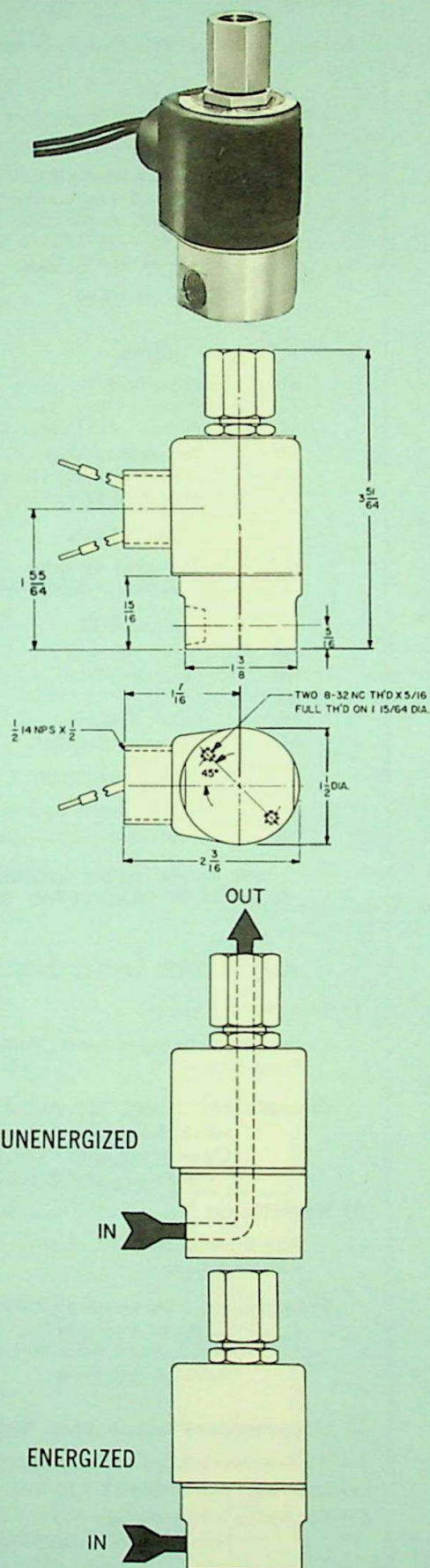
* Can only be supplied with an open strap housing.

For Application Assistance
please use Questionnaire, page 91.

"O" SERIES

2 WAY NORMALLY OPEN SOLENOID VALVE

TYPE
204



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

U.L. approval on all standard types, and most optional variations.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
 Special; -60°F to $+350^{\circ}\text{F}$
 $(-51^{\circ}\text{C}$ to $+177^{\circ}\text{C})$

Maximum Operating Pressure Differential: Standard; 0 to 350

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
 6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
 Special; to $+180^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
 Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
 Optional; Brass

Orifice Diameter: $\frac{3}{64}$ in. to $\frac{3}{32}$ in.

Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
 Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 7 ounces

TYPE 204		2 WAY NORMALLY OPEN		"O" SERIES		
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL	
					AC	DC
20401	20481	$\frac{1}{8}$ in.	$\frac{3}{64}$	0.05	350	350
20402	20482	" "	$\frac{1}{16}$	0.08	200	200
20403	20483	" "	$\frac{3}{32}$	0.12	150	150
20411	20491	$\frac{1}{4}$ in.	$\frac{3}{64}$	0.05	350	350
20412	20492	" "	$\frac{1}{16}$	0.08	200	200
*20413	20493	" "	$\frac{3}{32}$	0.12	150	150

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$ *Indicates valves stocked locally by Allied distributor. Explosion Proof Housing also available from distributors.



GOULD

ALLIED CONTROL

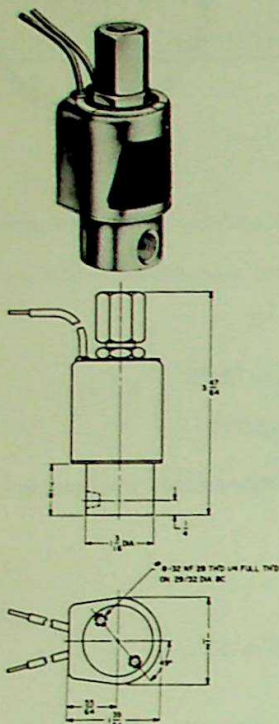
Gould Inc., Allied Control Division

100 Relay Road, Plantsville, Connecticut 06479

Telephone (203) 628-9654

TYPE BM-204

2-WAY NORMALLY-OPEN
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 204 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

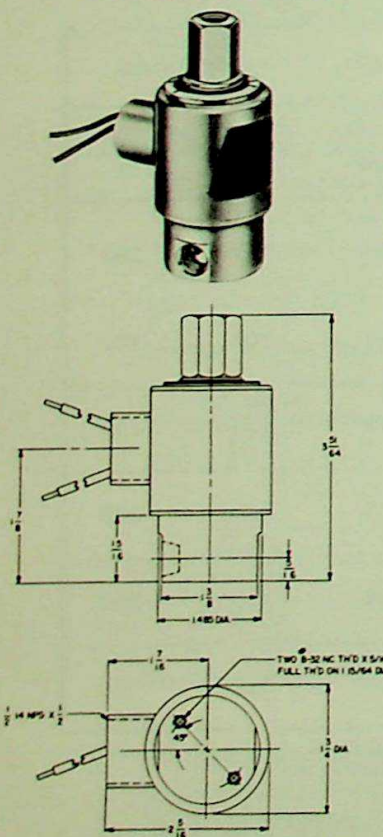
Body: Brass, Miniature

Porting: 1/8 in. NPTF

Weight: 15 ounces (approx.)

TYPE HH-204

2-WAY NORMALLY-OPEN
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps
Inrush and Holding current of standard 120 volt
d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-204

NOISELESS AC OPERATION
2-WAY NORMALLY-OPEN RECTIFIED COIL

Characteristics: Same as std. type 204 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size	Average Cv Factor	Max. Pressure PSI
3/64	0.05	350
1/16	0.08	200
3/32	0.12	150

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX

DESCRIPTION

COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

BODY

BB	Brass Body
BC	Manual Over-Ride
BE	Bottom Inlet (Body)
BH	Hexagonal Body
BM	Miniature Body (Brass)
BX	Miniature Body (Stainless)

METERING

MA	Metering Adapter
MV	Metering Adapter—Free Venting

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	J. I. C.
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

U	Underwriters' Approval
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 20492 120-VAC 60-cycles
which designates a 2-way Normally-
Open valve with 1/8 in. Orifice, 1/4 in.
NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1 BBMA -20492 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Adapter Metering

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-20492 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-20492 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

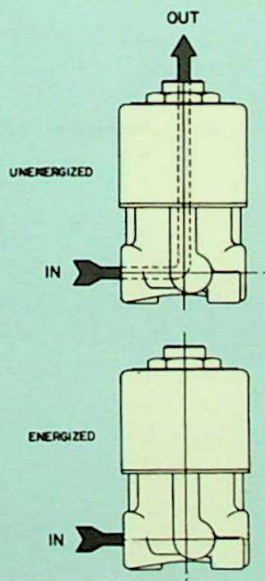
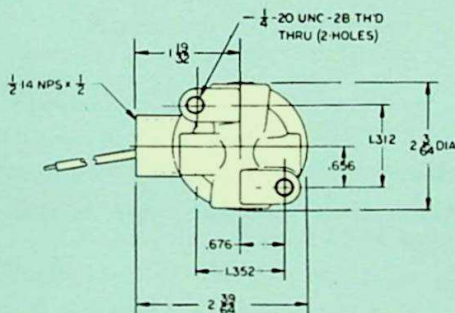
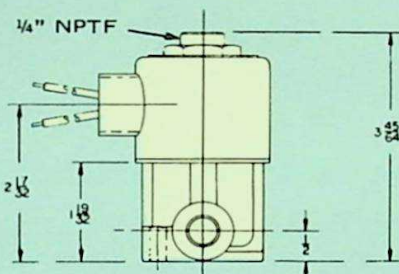
For Application Assistance, Please Use Questionnaire on page 91.

"2" SERIES

2-WAY NORMALLY OPEN SOLENOID VALVE

TYPE

254



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; -45° to $+185^{\circ}$ F
 $(-43^{\circ}$ C to $+85^{\circ}$ C)
 Special; -60° F to $+350^{\circ}$ F
 $(-51^{\circ}$ C to $+177^{\circ}$ C)

Maximum Operating Pressure Differential:

Standard; Vacuum to 275 PSI
 Special to 600 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
 6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}$ C
 Special; to $+200^{\circ}$ C

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: 3/32" to 3/16"

Porting: 1/4" NPTF & 3/8" NPTF

Housing: 1/2 in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 2.5 lbs.

TYPE 254		2-WAY NORMALLY OPEN SOLENOID VALVE			2" SERIES	
CATALOG NO.		PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)	
CONDUIT HOUSING	GROMMET HOUSING				A-C	D-C
25401	25481	1/4"	3/32	.25	275	275
25402	25482	1/4"	1/8	.35	175	175
25403	25483	1/4"	5/32	.45	125	125
25404	25484	1/4"	3/16	.50	100	100
25411	25491	3/8"	3/32	.25	275	275
25412	25492	3/8"	1/8	.35	175	175
25413	25493	3/8"	5/32	.45	125	125
25414	25494	3/8"	3/16	.50	100	100

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps.

Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil

HOUSING

HR	Strain Relief
----	---------------

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 25411 120-VAC 60-cycles which designates a 2-way normally open valve with 3/32 in. orifice, 3/8 in. NPTF Porting and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-25411 120/60 same as example No. 1 except Waterproof Coil,

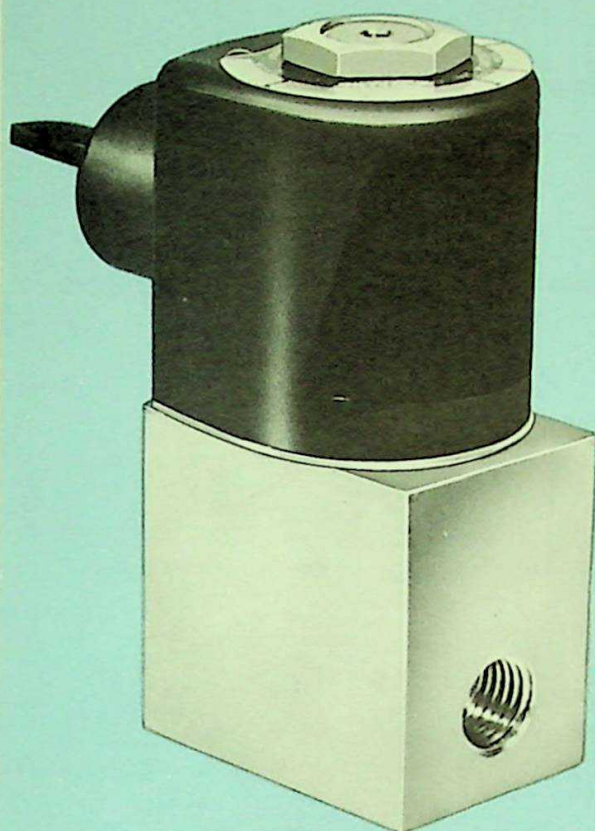
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"O" SERIES

2-WAY PILOT OPERATED PISTON VALVE

TYPES
240
&
241



GENERAL INFORMATION:

Features only 3 moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Operating Pressure Differential: 5 to 1000 psig.

Burst Pressure: 6000 psi

Leakage: Type #240 Bubble Tight At All Pressures
#241 Bubble Tight At Rated Pressures

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 13 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+180^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 30 milliseconds

MECHANICAL CHARACTERISTICS:

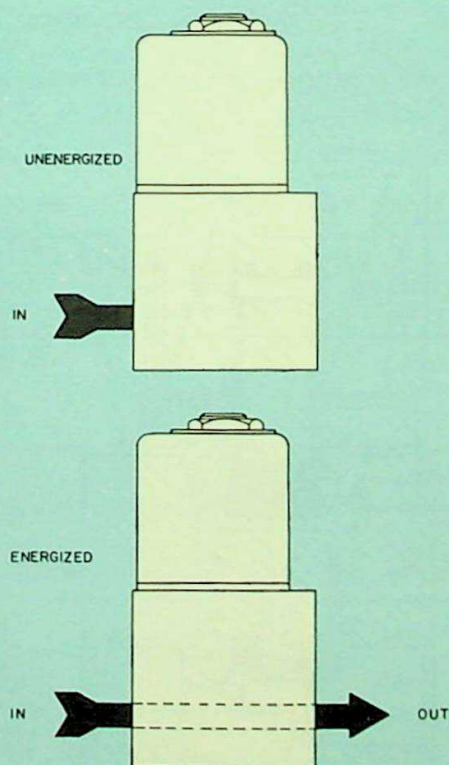
Body: Brass.

Orifice Diameter: $\frac{1}{4}$ in. & $\frac{3}{8}$ in.

Porting: $\frac{1}{4}$ in. NPTF $\frac{3}{8}$ in. NPTF, & $\frac{1}{2}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: $\frac{1}{4}$ in. Orifice Valves $1\frac{3}{4}$ Lbs.
 $\frac{3}{8}$ in. Orifice Valves 2 Lbs.



TYPE 240 241		2-WAY PILOT OPERATED PISTON VALVES				"O" SERIES			
CAT. No. CONDUIT HOUSING	CAT. No. GROMMET HOUSING	PIPE SIZE	ORIFICE	Cv FAC- TOR	LEAK- AGE	OPERATING PRESSURE DIFFERENTIAL			
						A-C		D-C	
						Gas	Liquid	Gas	Liquid
*24001	24081	$\frac{1}{4}$ "	$\frac{1}{4}$ "	.758	0	500	—	500	—
*24011	24091	$\frac{1}{4}$ "	$\frac{1}{4}$ "	.758	0	—	250	—	200
*24002	24082	$\frac{3}{8}$ "	$\frac{3}{8}$ "	1.6	0	500	—	200	—
*24012	24092	$\frac{3}{8}$ "	$\frac{3}{8}$ "	1.6	0	—	250	—	100
24003	24083	$\frac{3}{8}$ "	$\frac{1}{4}$ "	.758	0	500	—	500	—
24013	24093	$\frac{3}{8}$ "	$\frac{1}{4}$ "	.758	0	—	250	—	200
24004	24084	$\frac{1}{2}$ "	$\frac{3}{8}$ "	1.6	0	500	—	200	—
24014	24094	$\frac{1}{2}$ "	$\frac{3}{8}$ "	1.6	0	—	250	—	100
24101	24181	$\frac{1}{4}$ "	$\frac{1}{4}$ "	.758		1000	—	—	—
24111	24191	$\frac{1}{4}$ "	$\frac{1}{4}$ "	.758		—	500	—	—
24102	24182	$\frac{3}{8}$ "	$\frac{1}{4}$ "	.758		1000	—	—	—
24112	24192	$\frac{3}{8}$ "	$\frac{1}{4}$ "	.758		—	500	—	—

*Indicates valves stocked locally by Allied distributor.



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division

100 Relay Road, Plantsville, Connecticut 06479

Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H
Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 13 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.380 amps Holding 0.230 amps
Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	J. I. C.
HR	Strain Relief

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 24091, 120-VAC 60-Cycles.
This designates:

240 = 2-way Normally Closed
1/4" Orifice
1/4" NPTF Porting
91 = Grommet Housing
250-psi (oil)

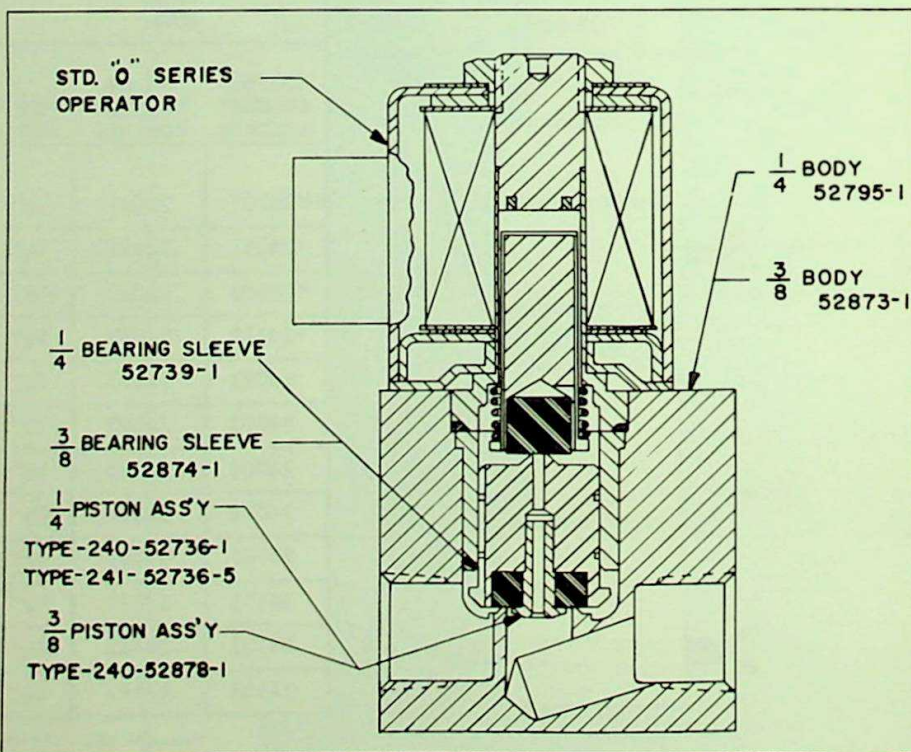
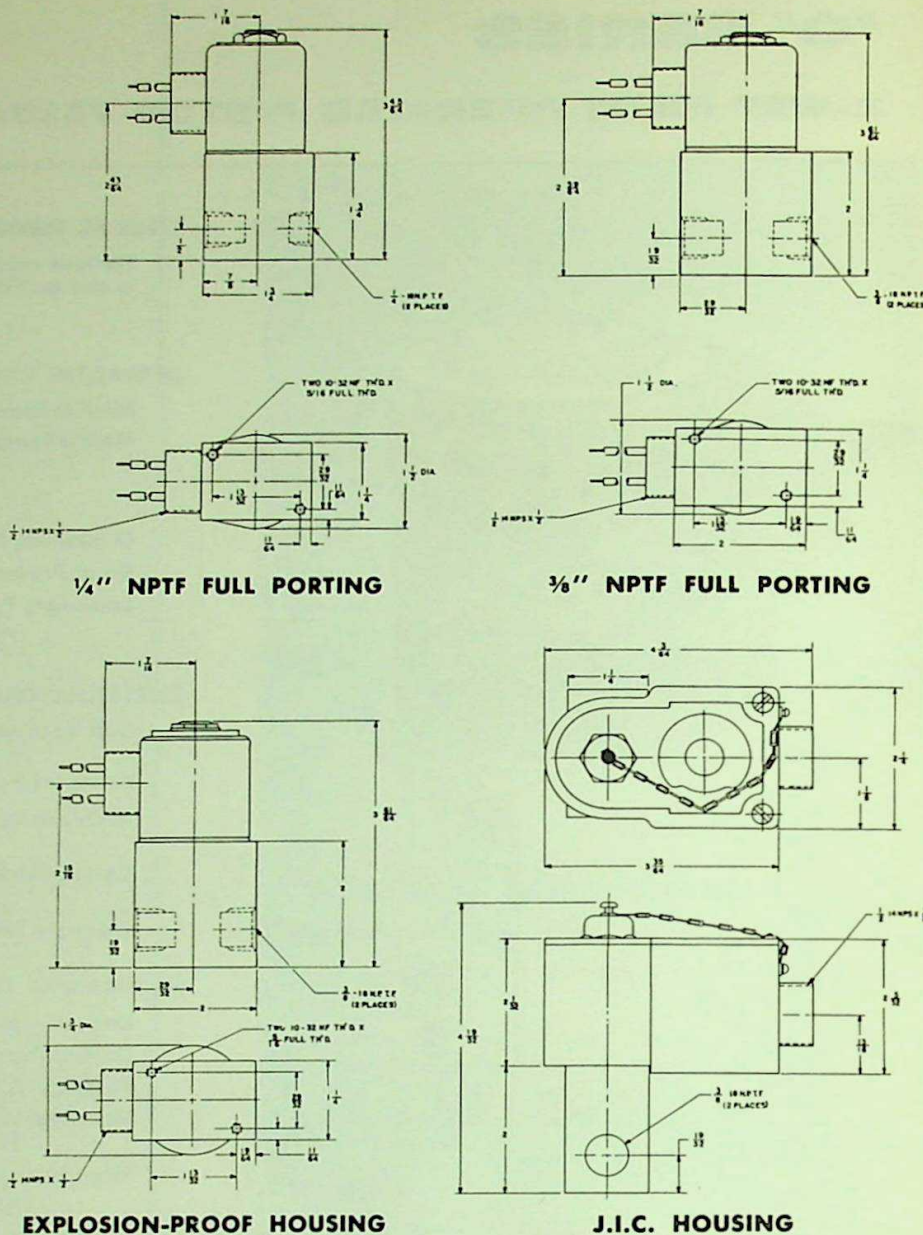
2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1HJ-24001, 120-VAC, 60-Cycles.

This designates:

1 = Class B Molded Coil
HJ = J. I. C. Housing
240 = Same as above
01 = 500-psi (air)



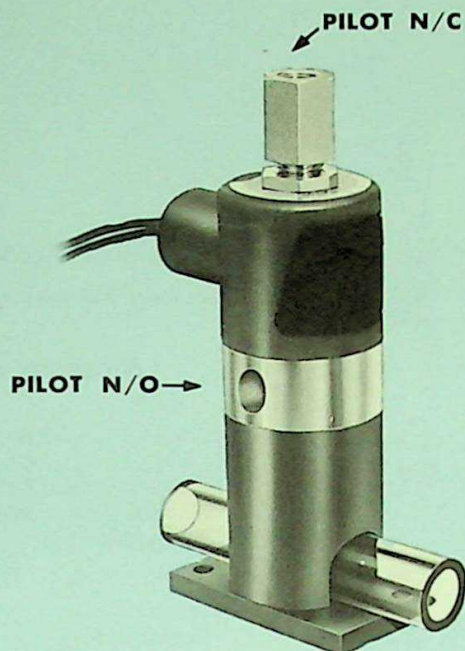
CROSS-SECTION DWG & PARTS LIST FOR TYPES 240 & 241

For Application Assistance, Please Use Questionnaire on page 91.

"O" SERIES

PINCH VALVE

TYPE
206



NORMALLY CLOSED OR NORMALLY OPEN



**NORMALLY OPEN OR NORMALLY CLOSED
(DEPENDENT ON PILOT VALVE)**

GENERAL INFORMATION:

The valve, can be used for NC or NO service. Valve with direct mounted pilot operator features only three moving parts consisting of pilot plunger, spring and piston slide. The remote pilot valve consists of one moving part, the piston slide. Valve can be mounted in any position and can be serviced without removal from line. Both valves are designed for hydraulic or pneumatic pilot pressure control.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; 10°F to 160°F
(-12°C to +71°C)

Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. +25°C for continuous duty

Coil Construction: Standard; Class "A" to +110°C

Operate Time: 30 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Aluminum

Tube O.D.: 1/2 in. and 3/4 in.

Pilot Port: 1/8 in. NPTF

Housing: 1/2 in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: 1 lb. 2 oz.
(Remote pilot valve — 6 oz.)

NOTE:

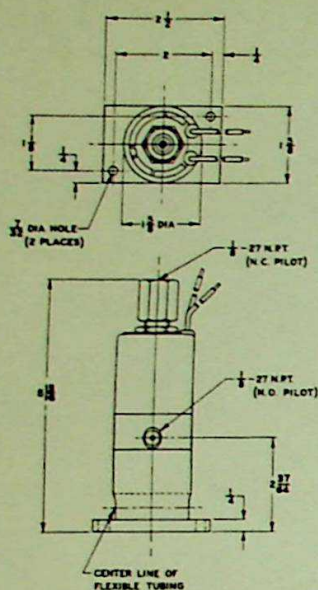
Operating pressures specified as determined with standard Tygon tubing (1/8" wall). Recommend 3/4" minimum tubing wall for leak-free operation. Pressure ratings and compatible media for various types of flexible tubing consult factory.

TYPE 206		2-WAY NC or NO PILOT CONTROLLED PINCH VALVE			"O" SERIES
CATALOG NO. CONDUIT HOUSING	CATALOG NO. GROMMET HOUSING	TUBING SIZE	PILOT CONN.	MAXIMUM MAINLINE PRESS.	PILOT PRESS. REQUIRED FOR MAXIMUM RATED OPERATING PRESS.
*20601	20681	1/2 in. O.D.	1/8 in. NPTF	60 PSIG	80 PSI
*20602	20682	3/4 in. O.D.	1/8 in. NPTF	40 PSIG	60 PSI
2-WAY NC or NO REMOTE PILOT CONTROLLED PINCH VALVE					
CATALOG NO. (HOUSING N/A)		TUBING SIZE	PILOT CONN.	MAXIMUM MAINLINE PRESS.	MINIMUM PILOT PRESS.
*20641		1/2 in.	1/8 in. NPTF	60 PSIG	Mainline Press. plus 20 PSI
20642		3/4 in.	1/8 in. NPTF	40 PSIG	Mainline Press. plus 20 PSI

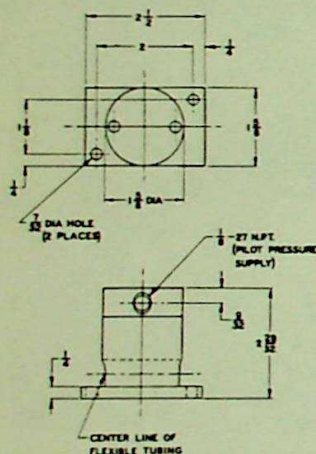
*Indicates valves stocked locally by Allied distributor.

 **GOULD ALLIED CONTROL**
Gould Inc., Allied Control Division
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Telephone (203) 628-9654

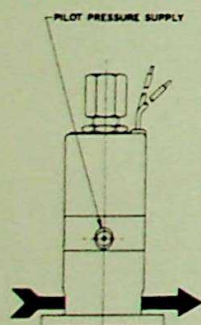
PINCH VALVE NORMALLY OPEN OR NORMALLY CLOSED



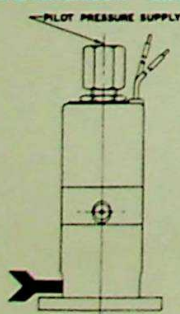
REMOTE PILOT PINCH VALVE



PINCH VALVE NORMALLY OPEN



PINCH VALVE NORMALLY CLOSED



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coils

Inrush 0.380 amps Holding 0.230 amps

Inrush and Holding current of standard 120 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE 206

Max. O.D. of tubing is 1/2 in. and 3/4 in.

The following is a listing of CV factors based on 1 ft. of tubing and various tube "ID's".

I.D. Tubing	Average Cv
1/4" I.D.	Cv = 1.5
5/16" I.D.	Cv = 2.5
1/2" I.D.	Cv = 7.0

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION
	COIL
1	Class "B" Molded
4	Class "A" 120-240/60 Coil
6 HB	Class "B" Molded Coil with Spade Connectors and Strap Hsg.
	HOUSING
HB	Strap Housing
HH	Explosion Proof
HS	Mounting Bracket

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 20681 120/60 cycles which designates a 2-way Normally-Closed /NO valve, Grommet Housing, 1/8 in. NPTF Pilot Connection for use with 1/2 in. O.D. tubing size.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1
6HB20681 120/60
Same as example No. 1 except:
Class "B" Molded Coil with
Spade Connectors and
Strap Housing.

Specify vacuum if valves are to be used on VAC.

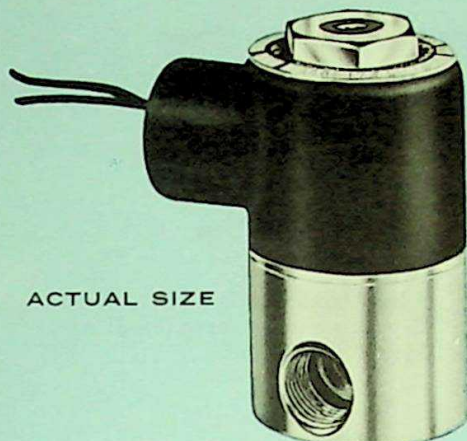
For Application Assistance, Please Use Questionnaire on page 91.

"1" SERIES

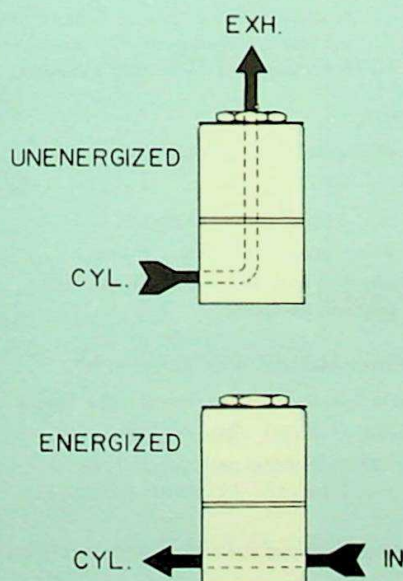
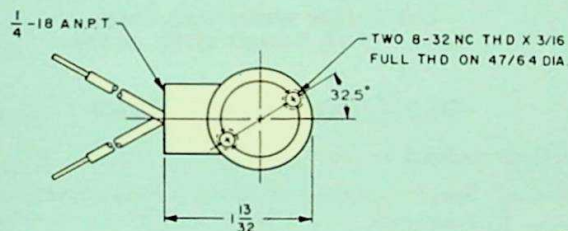
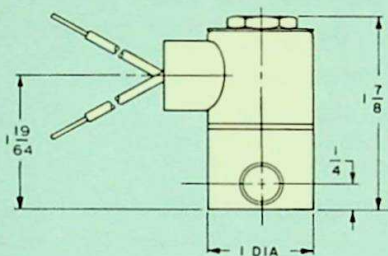
3 WAY FREE VENTING SOLENOID VALVE

TYPE

316



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel

Orifice Diameter: $1/32$ in. to $1/8$ in. (Inlet)

Porting: $1/8$ in. NPTF

Housing: $1/4$ in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 316			3 WAY NORMALLY CLOSED			"1" SERIES		
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C & D-C
				INLET	EXHAUST	INLET	EXHAUST	
31601	31681	$1/8$ in.	$1/32$ in.	$1/32$ in.	$1/32$ in.	.019	.019	200
*31602	*31682	$1/8$ in.	$3/64$ in.	$3/64$ in.	$3/64$ in.	.046	.046	150
31603	31683	$1/8$ in.	$1/16$ in.	$3/64$ in.	$3/64$ in.	.080	.046	100
31604	31684	$1/8$ in.	$1/16$ in.	$1/16$ in.	$1/16$ in.	.080	.080	75 D-C ONLY
31605	31685	$1/8$ in.	$3/32$ in.	$3/64$ in.	$3/64$ in.	.170	.046	50
31606	31686	$1/8$ in.	$1/8$ in.	$3/64$ in.	$3/64$ in.	.240	.046	20

*Indicates valves stocked locally by Allied distributor.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "1" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
	BODY
BB	Brass Body
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BF	Brass with 1/16" NPTF
	METERING
MB	Metering Bottom
	HOUSING
HA	1/2" Conduit
HB	Strap Housing
	MISCELLANEOUS
U	Underwriters' Approval

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 31681 120-VAC 60-cycles
which designates a 3-way Normally-Closed valve with 1/32 in. Orifice 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMB-31681 120/60
Same as example No. 1 except:
Molded coil, Brass Body, and
Bottom Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-31681 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-31681 120/VAC 60-cycles.

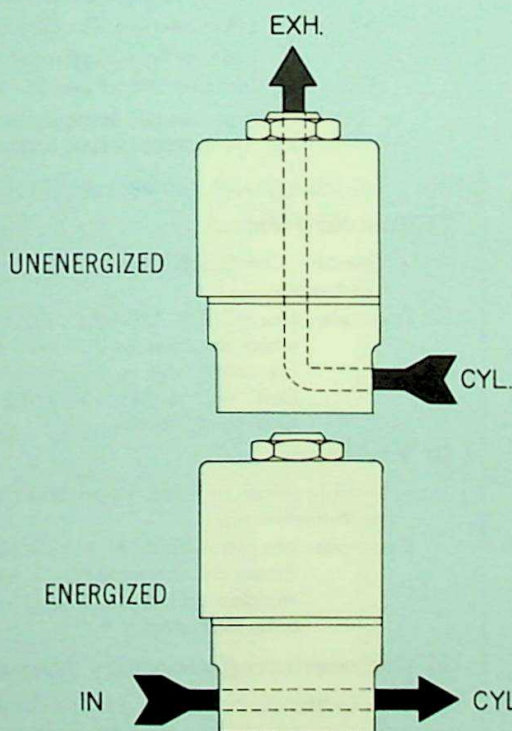
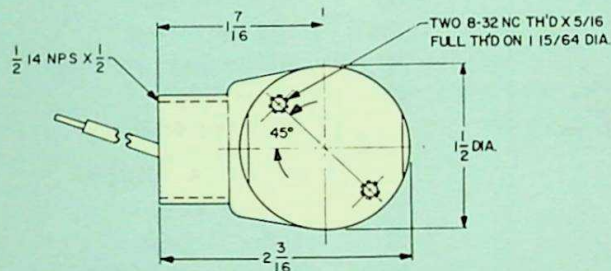
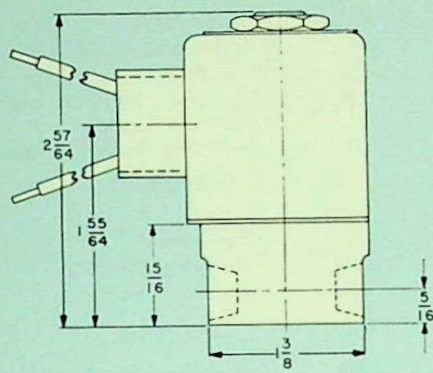
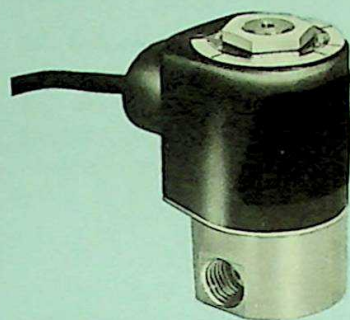
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"O" SERIES

3 WAY FREE VENTING SOLENOID VALVE

TYPE
306



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line. U.L. approval on all standard types.

OPERATING CONDITIONS:

Media: Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 175
Special; to 500

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: $3/4$ in. to $1/4$ in. (Inlet)

Porting: $1/8$ in. NPTF & $1/4$ in. NPTF

Housing: $1/2$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 6 ounces

TYPE 306		3 WAY FREE VENTING				"O" SERIES		
CATALOG NO.	CONDUIT GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL	
			INLET	EXHAUST	INLET	EXHAUST	AC	DC
30601	30681	$1/8$ in.	$3/4$	$1/16$	0.05	0.08	175	175
30602	30682	" "	$1/16$	$1/16$	0.12	0.08	125	125
30603	30683	" "	$3/32$	$3/32$	0.21	0.12	90	90
30604	30684	" "	$1/8$	$3/32$	0.32	0.12	60	60
30605	30685	" "	$3/32$	$3/32$	0.40	0.12	40	40
30606	30686	" "	$3/16$	$3/32$	0.50	0.12	25	25
30607	30687	" "	$1/4$	$3/32$	0.70	0.12	Vacuum	Vacuum
30608	30688	" "	$3/32$	$3/4$	0.21	0.05	90	90
30611	30691	$1/4$ in.	$3/4$	$1/16$	0.05	0.08	175	175
*30612	30692	" "	$1/16$	$1/16$	0.12	0.08	125	125
30613	30693	" "	$3/32$	$3/32$	0.21	0.12	90	90
30614	30694	" "	$1/8$	$3/32$	0.32	0.12	60	60
30615	30695	" "	$3/32$	$3/32$	0.40	0.12	40	40
30616	30696	" "	$3/16$	$3/32$	0.50	0.12	25	25
30617	30697	" "	$1/4$	$3/32$	0.70	0.12	Vacuum	Vacuum
30618	30698	" "	$3/32$	$3/4$	0.21	0.05	90	90

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$ *Indicates valves stocked locally by Allied distributor. Explosion Proof Housing also available from distributors.



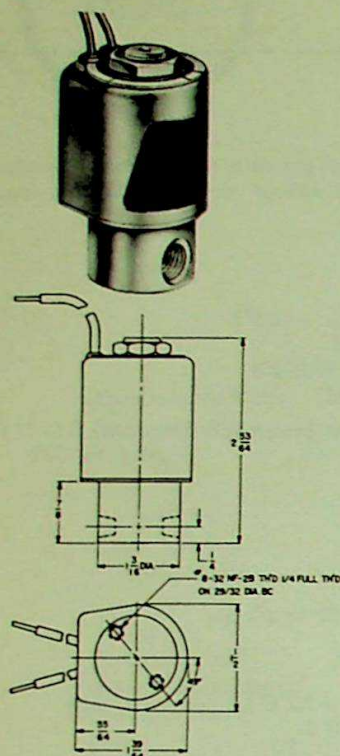
GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE BM-306

3-WAY FREE-VENTING
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 306 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

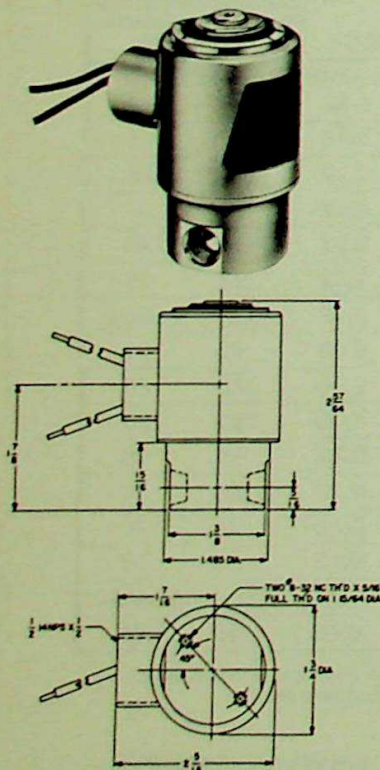
Orifice Diameter: 3/4 in. to 1/2 in.

Porting: 1/8 in. NPTF

Weight: 1.4 ounces (approx.)

TYPE HH-306

3-WAY FREE-VENTING
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 306 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps
Inrush and Holding current of standard 110 volt
d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-306

NOISELESS AC OPERATION
3-WAY FREE-VENTING RECTIFIED COIL

Characteristics: Same as std. type 306 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size		Average Cv Factor		Max. Pressure PSI
Inlet	Exhaust	Inlet	Exhaust	
3/4	1/6	0.05	0.08	175
1/6	1/6	0.12	0.08	125
3/32	3/32	0.21	0.12	90
1/8	3/32	0.32	0.12	60
3/32	3/32	0.40	0.12	40
3/16	3/32	0.50	0.12	25
1/4	3/32	0.70	0.12	VAC.
3/32	3/4	0.21	0.05	90

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

BODY

BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BE	Bottom Inlet
BH	Hexagonal Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless Steel)

METERING

MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	JIC Housing
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
U	Underwriters' Approval
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 30692 120-VAC 60-cycles
which designates a 3-way Free-Vent-
ing valve with 1/8 in. inlet and exhaust
Orifices, 1/4 in. NPTF Porting and
Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves
with variations.

Example: No. 1BBMS-30692 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Side Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-30692 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-30692 120/VAC 60-cycles.

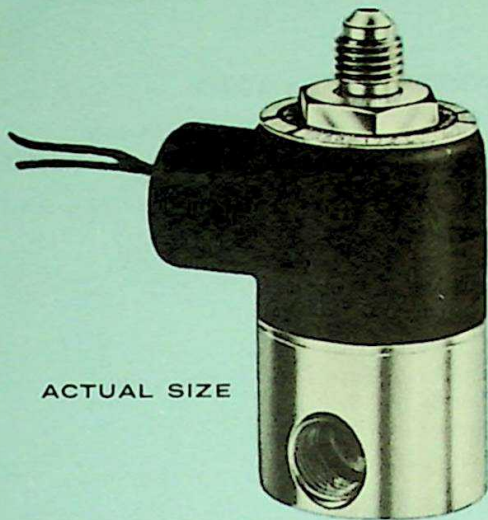
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire
on page 91.

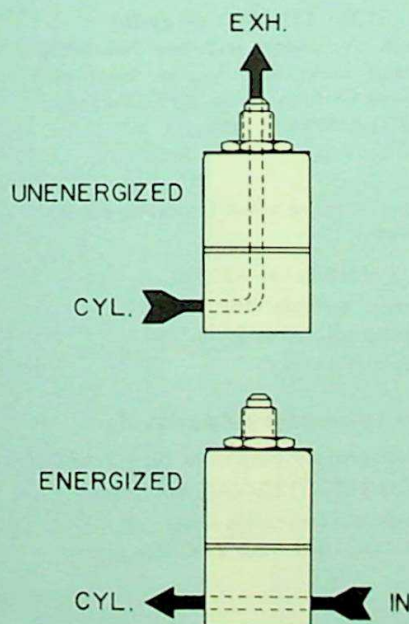
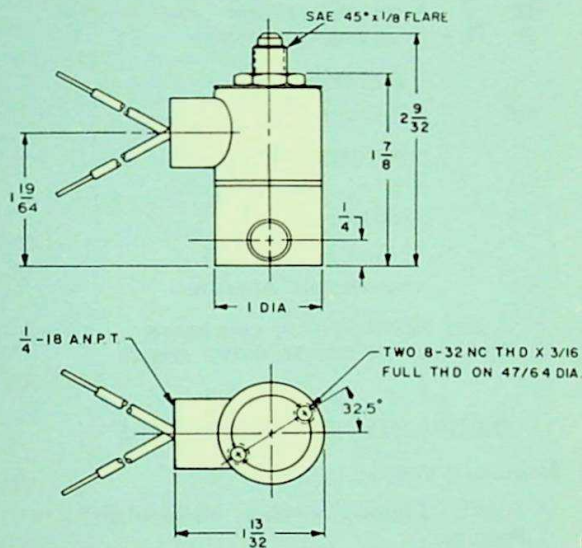
"1" SERIES

3 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE
313



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel

Orifice Diameter: $\frac{1}{32}$ in. to $\frac{1}{8}$ in. (Inlet)

Porting: $\frac{1}{8}$ in. NPTF

Housing: $\frac{1}{4}$ in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 313		3 WAY NORMALLY CLOSED					"1" SERIES
CATALOG NO.	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL
CONDUIT HOUSING			INLET	EXHAUST	INLET	EXHAUST	A-C & D-C
31301	31381	1/8 in.	1/32 in.	1/32 in.	.019	.019	200
31302	*31382	1/8 in.	3/64 in.	3/64 in.	.046	.046	150
*31303	*31383	1/8 in.	1/16 in.	3/64 in.	.080	.046	100
31304	31384	1/8 in.	1/16 in.	1/16 in.	.080	.080	75 D-C ONLY
31305	31385	1/8 in.	3/32 in.	3/64 in.	.170	.046	50
31306	31386	1/8 in.	1/8 in.	3/64 in.	.240	.046	20

*Indicates valves stocked locally by Allied distributor.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "I" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
PF	Stop Adapter
BODY	
BB	Brass Body
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BF	Brass with 1/16" NPTF
METERING	
MB	Metering Bottom
HOUSING	
HA	1/2" Conduit
HB	Strap Housing
MISCELLANEOUS	
U	Underwriters' Approval

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 31381 120-VAC 60-cycles
which designates a 3-way Normally-Closed valve with 1/32 in. inlet and exhaust Orifices, 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMB-31381 120/60
Same as example No. 1 except:
Molded coil, Brass Body, and
Bottom Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-31381 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-31381 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing or a special slotted housing.

For Application Assistance, Please Use Questionnaire on page 91.

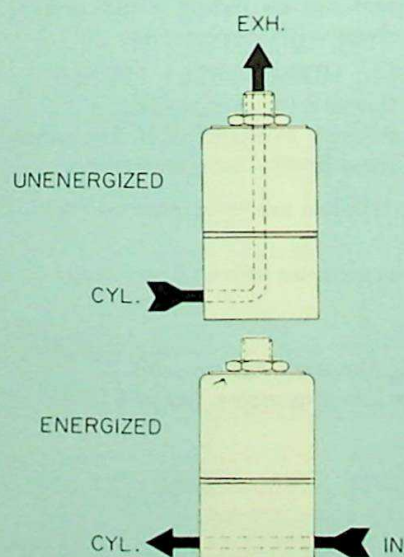
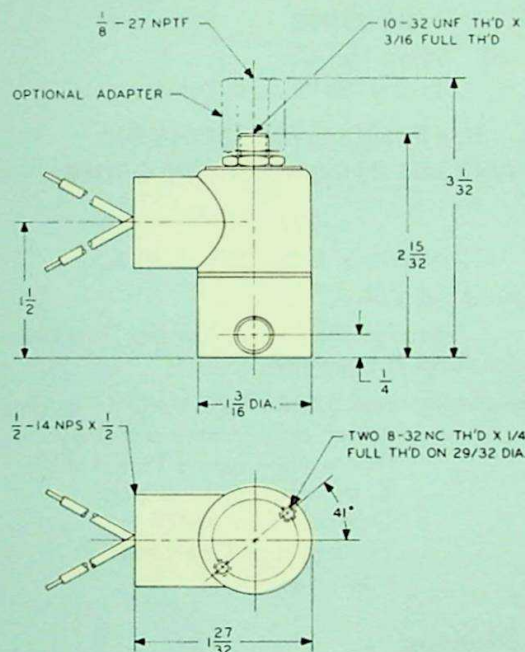
"8" SERIES

3 WAY N/C FREE VENT/LINE CONNECTING VALVE

TYPE
383



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
Standard; 0 to 175
Burst Pressure: 6000psi
Leakage: Standard; bubble tight
Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard: Brass
Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{8}$ in. (inlet)
Porting: $\frac{1}{8}$ in. NPTF
Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Weight: 8.0 ounces maximum
Compensating Plunger with Viton top seal: Standard

TYPE 383		3 WAY NORMALLY OPEN			"8" SERIES		
CATALOG NO. CONDUIT HOUSING	CATALOG NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C & D-C
			INLET	EXHAUST	INLET	EXHAUST	
38301	38381	$\frac{1}{8}$ in.	$\frac{3}{64}$ in.	$\frac{3}{64}$ in.	.05	.05	175
38302	38382	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	$\frac{1}{16}$ in.	.12	.09	125
38303	38383	$\frac{1}{8}$ in.	$\frac{3}{32}$ in.	$\frac{1}{16}$ in.	.20	.09	75
38304	38384	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	.30	.09	50

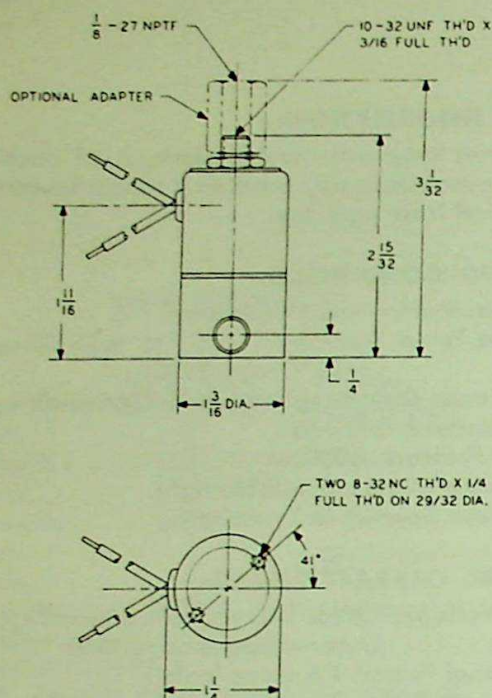


GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Stnd. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil
- PF Stop Adapter

BODY

- BX Stainless Steel Body
- BD Bottom Outlet (Body)
- BE Bottom Inlet (Body)
- BF Brass with 1/16" NPTF

METERING

- MS Side Metering

HOUSING

- HB Strap Housing
(Not initially available)

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 38381 120-VAC 60-cycles which designates a 3-way Normally-Closed Valve with 3/64 in. inlet and exhaust Orifices 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BXMS-38381 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body, Side Metering

Specify vacuum if valves are to be used on VAC.

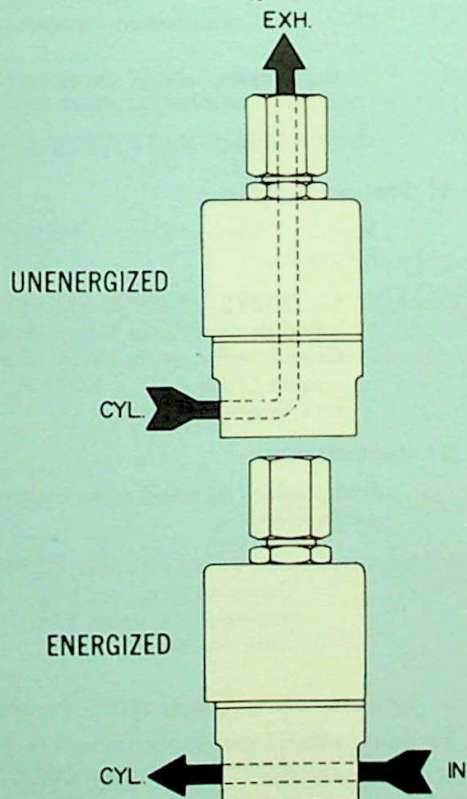
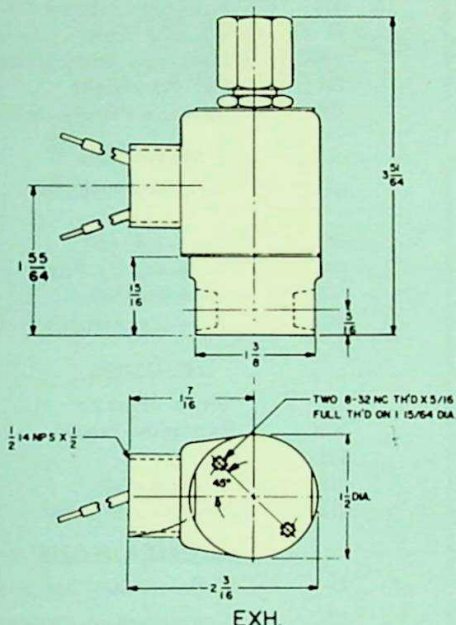
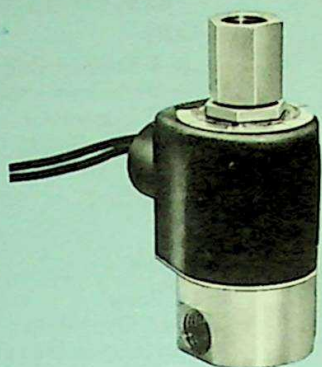
* Can only be supplied with an open strap housing.

For Application Assistance,
please use Questionnaire, page 91.

"O" SERIES

3 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE
303



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.
U.L. approval on all standard types.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 175
Special; to 500

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: $3/64$ in. to $1/4$ in.

Porting: $1/8$ in. NPTF & $1/4$ in. NPTF

Housing: $1/2$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 7 ounces

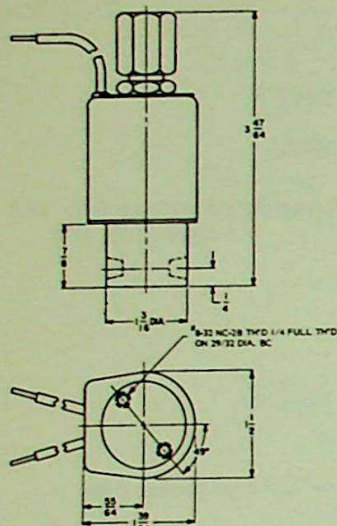
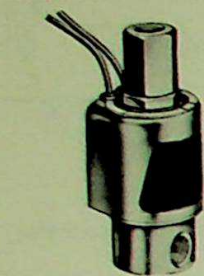
TYPE 303		3 WAY NORMALLY CLOSED				"O" SERIES		
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL
				INLET	EXHAUST	INLET	EXHAUST	AC
30301	30381		$1/8$ in.	$3/64$	$1/16$	0.05	0.08	175
30302	30382		" "	$1/16$	$1/16$	0.12	0.08	125
*30303	30383		" "	$3/32$	$3/32$	0.21	0.12	90
30304	30384		" "	$1/8$	$3/32$	0.32	0.12	60
30305	30385		" "	$3/32$	$3/32$	0.40	0.12	40
30306	30386		" "	$3/16$	$3/32$	0.50	0.12	25
30307	30387		" "	$1/4$	$3/32$	0.70	0.12	Vacuum
30308	30388		" "	$3/32$	$3/64$	0.21	0.05	90
*30311	30391		$1/4$ in.	$3/64$	$1/16$	0.05	0.08	175
*30312	30392		" "	$1/16$	$1/16$	0.12	0.08	125
30313	30393		" "	$3/32$	$3/32$	0.21	0.12	90
*30314	30394		" "	$1/8$	$3/32$	0.32	0.12	60
30315	30395		" "	$3/32$	$3/32$	0.40	0.12	40
30316	30396		" "	$3/16$	$3/32$	0.50	0.12	25
30317	30397		" "	$1/4$	$3/32$	0.70	0.12	Vacuum
30318	30398		" "	$3/32$	$3/64$	0.21	0.05	90

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$
*Indicates valves stocked locally by Allied distributor.

GOULD ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE BM-303
3-WAY NORMALLY-CLOSED
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 303 except:

Media Temperature: Standard —45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

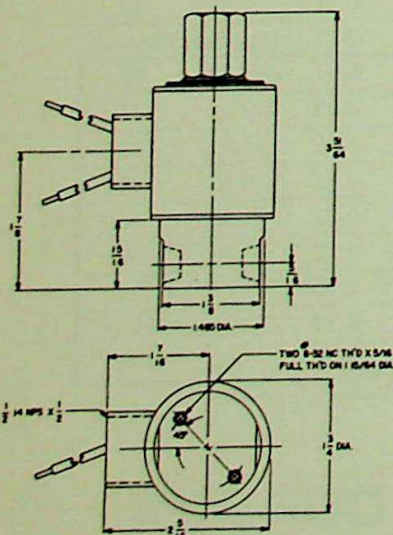
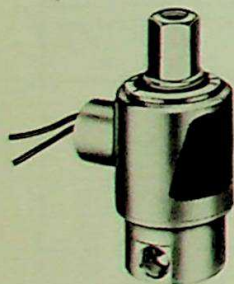
Orifice Diameter: 3/64 in. to 1/32 in.

Porting: 1/8 in. NPTF

Weight: 15 ounces (approx.)

TYPE HH-303

3-WAY NORMALLY-CLOSED
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 303 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps
 Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-303

NOISELESS AC OPERATION

3-WAY NORMALLY-CLOSED RECTIFIED COIL

Characteristics: Same as std. type 303 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size		Average Cv Factor		Max. Pressure PSI
Inlet	Exhaust	Inlet	Exhaust	
3/64	1/16	0.05	0.08	175
1/16	1/16	0.12	0.08	125
3/32	3/32	0.21	0.12	90
1/8	3/32	0.32	0.12	60
5/32	3/32	0.40	0.12	40
3/16	3/32	0.50	0.12	25
1/4	3/32	0.70	0.12	VAC.
3/32	3/64	0.21	0.05	90

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX

DESCRIPTION

COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

BODY

BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BH	Hexagonal Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless)

METERING

MA	Metering Adapter
MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side
MV	Metering Adapter—Free venting

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	J. I. C.
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

U	Underwriters' Approval
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 30392 120-VAC 60-cycles which designates a 3-way Normally-Closed valve with 1/16 in. inlet and exhaust Orifices, 1/4 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMS-30392 120/60 Same as example No. 1 except: Molded coil, Brass Body, Side Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-30392 120 VAC 60-cycles.

(b) **Example:** When Molded coil is required, No. 1U-30392 120 VAC 60-cycles.

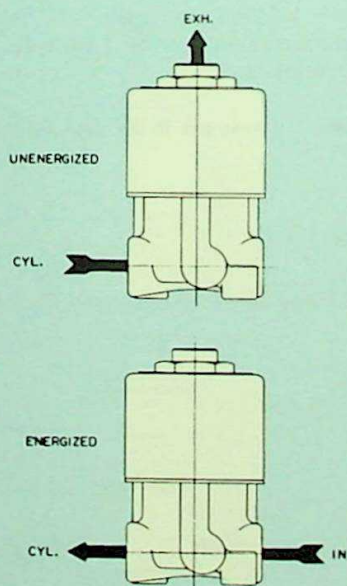
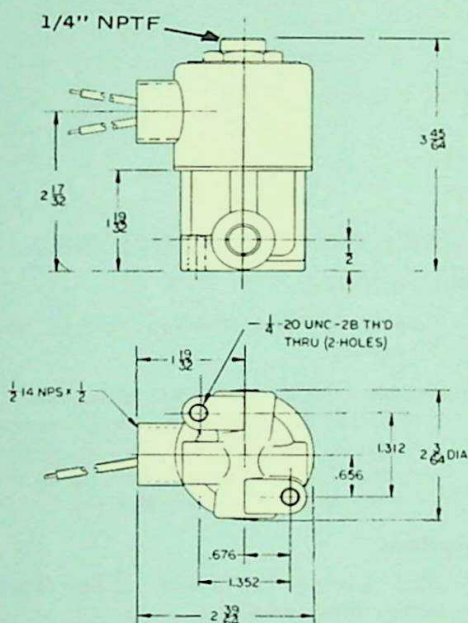
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"2" SERIES

3 WAY NORMALLY CLOSED SOLENOID VALVE

TYPE
350



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; $-45^{\circ} +$ to $+185^{\circ}F$
 $(-43^{\circ}C \text{ to } +85^{\circ}C)$
 Special; $-60^{\circ}F$ to $+350^{\circ}F$
 $(-51^{\circ}C \text{ to } +177^{\circ}C)$

Maximum Operating Pressure Differential:

Standard; Vacuum to 225 PSI
 Special to 650 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
 6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}C$
 Special; to $+200^{\circ}C$

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: $3/32"$ to $3/8"$

Porting: $1/4"$ NPTF & $3/8"$ NPTF

Housing: $1/2$ in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 2.5 lbs.

TYPE 350		3 WAY NORMALLY CLOSED				"2" SERIES		
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		CV FACTOR		MAXIMUM PRESSURE DIFFERENTIAL AC	OPERATING DIFFERENTIAL DC
			INLET	EXHAUST	INLET	EXHAUST		
35001	35081	$1/4$ in.	$3/32$	$3/32$	0.25	0.25	225	225
35002	35082	" "	$1/8$	$1/8$	0.35	0.35	150	150
*35003	35083	" "	$3/32$	$3/32$	0.45	0.45	125	125
35004	35084	" "	$3/16$	$3/16$	0.50	0.50	85	85
35005	35085	" "	$1/4$	$3/16$	0.75	0.50	50	50
35006	35086	" "	$3/16$	$3/16$	1.10	0.50	25	25
35007	35087	" "	$3/8$	$3/16$	1.95	0.50	15	15
35011	35091	$3/8$ in.	$3/32$	$3/32$	0.25	0.25	225	225
35012	35092	" "	$1/8$	$1/8$	0.35	0.35	150	150
35013	35093	" "	$3/32$	$3/32$	0.45	0.45	125	125
*35014	35094	" "	$3/16$	$3/16$	0.50	0.50	85	85
35015	35095	" "	$1/4$	$3/16$	0.75	0.50	50	50
35016	35096	" "	$3/16$	$3/16$	1.10	0.50	25	25
35017	35097	" "	$3/8$	$3/16$	1.95	0.50	15	15

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$
 *Indicates valves stocked locally by Allied distributor.

GOULD ALLIED CONTROL

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COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H
Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.00	120	0.300
12	3.00	240	0.150
24	1.50	480	0.075
48	0.75		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps

Inrush and Holding current of standard 110 volt d-c coil. 140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil

HOUSING

HR	Strain Relief
----	---------------

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 35017 120-VAC 60-cycles
which designates a 3-way normally closed valve with $\frac{3}{8}$ in. inlet orifice and $\frac{3}{8}$ in. exhaust Orifice, $\frac{3}{8}$ in. NPTF Porting and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-35017 120/60
same as example No. 1 except:
Waterproof Coil.

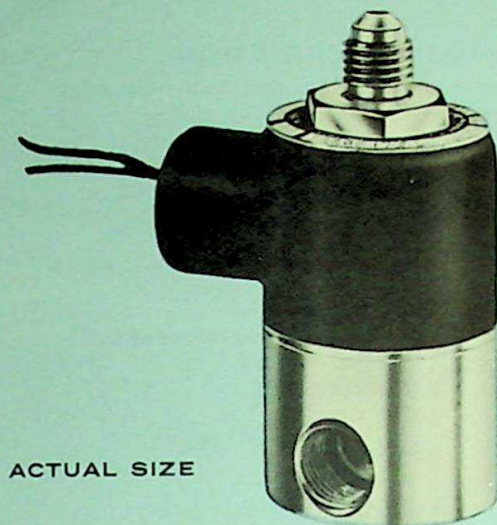
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

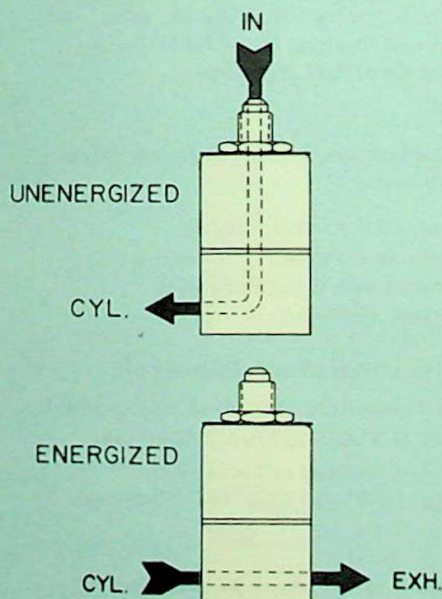
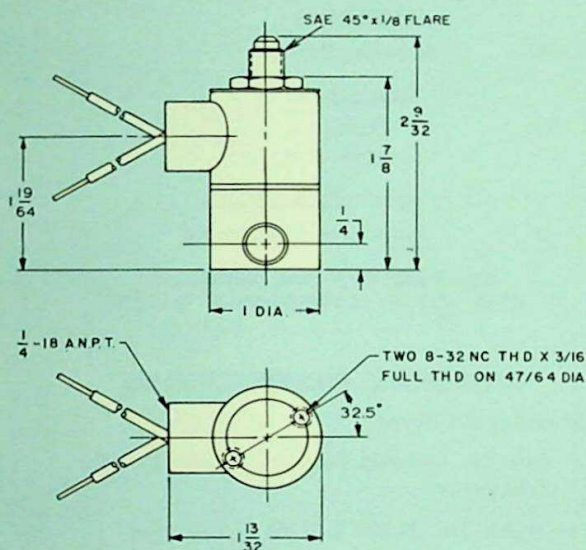
"1" SERIES

3 WAY NORMALLY OPEN SOLENOID VALVE

TYPE
314



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 150

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: 1/32 in. to 1/16 in. (Inlet)

Porting: 1/8 in. NPTF

Housing: 1/4 in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 314		3 WAY NORMALLY OPEN			"1" SERIES			
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C & D-C
				INLET	EXHAUST	INLET	EXHAUST	
31401	31481	1/8 in.	1/32 in.	1/32 in.	.019	.019	150	150
*31402	31482	1/8 in.	3/64 in.	3/64 in.	.046	.046	100	100
31403	31483	1/8 in.	3/64 in.	1/8 in.	.046	.080	90	90
*31404	*31484	1/8 in.	1/8 in.	1/8 in.	.080	.080	75 D C ONLY	
31405	31485	1/8 in.	3/64 in.	3/32 in.	.046	.170	50	50
31406	31486	1/8 in.	3/64 in.	1/8 in.	.046	.240	25	15

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$

*Indicates valves stocked locally by Allied distributor.



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COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "1" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
PF	Stop Adapter
BODY	
BB	Brass Body
BD	Bottom Outlet (Body)
BF	Brass with 1/16" NPTF
METERING	
MB	Metering Bottom
HOUSING	
HA	1/2" Conduit
HB	Strap Housing
MISCELLANEOUS	
U	Underwriters' Approval
USE PREFIX WHEN ORDERING AND LIST IN CONSECUTIVE ORDER	

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 31481 120-VAC 60-cycles which designates a 3-way Normally-Open valve with 1/32 in. inlet and exhaust Orifices, 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMB-31481 120/60
Same as example No. 1 except:
Molded coil, Brass Body, and
Bottom Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-31481 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-31481 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing or a special slotted housing.

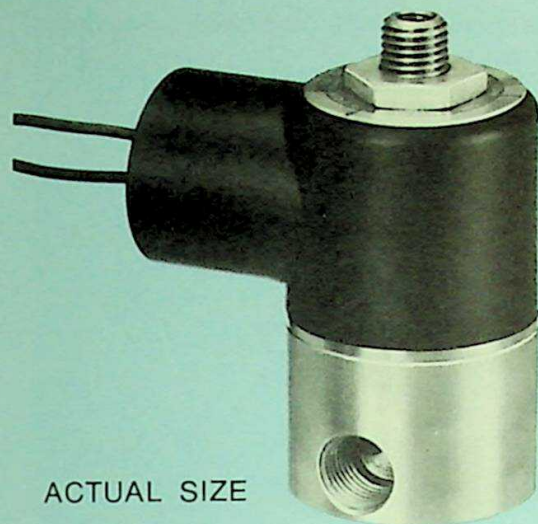
For Application Assistance, Please Use Questionnaire on page 91.

"8" SERIES

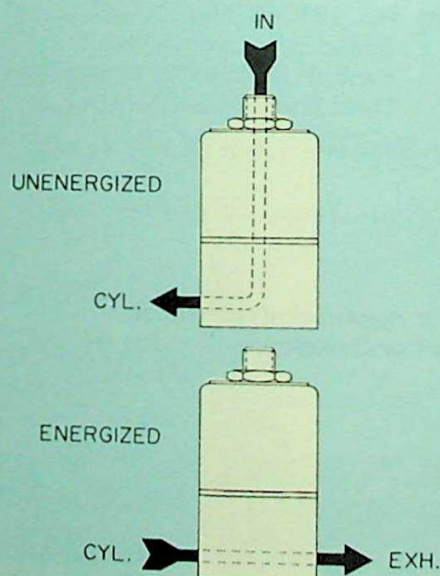
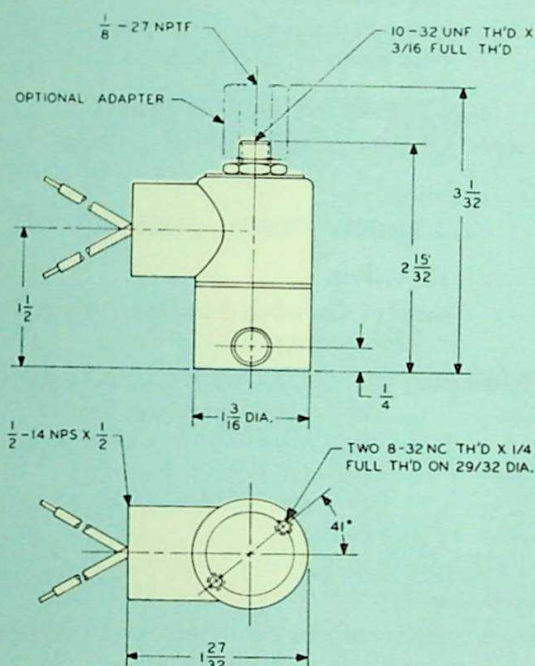
3 WAY NORMALLY OPEN SOLENOID VALVE

TYPE

384



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
 Standard: 0 to 150
Burst Pressure: 6000psi
Leakage: Standard; bubble tight
Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
 Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

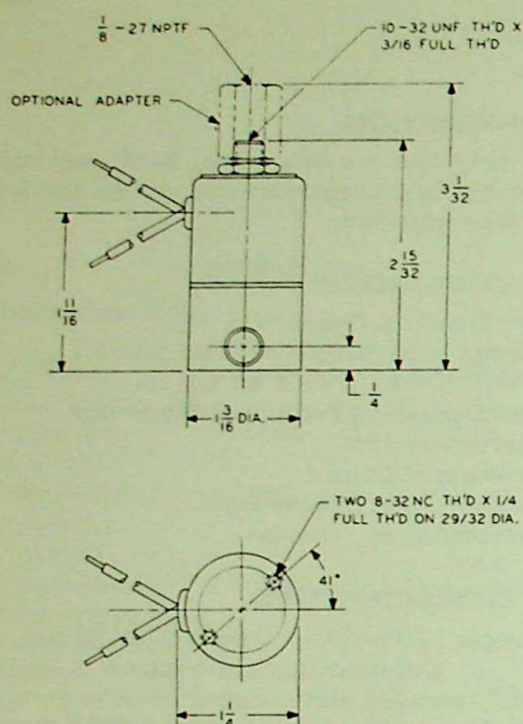
Body: Standard: Brass
Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{16}$ in. (inlet)
Porting: $\frac{1}{8}$ in. NPTF
Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Weight: 8.0 ounces maximum
Compensating Plunger with Viton top seal: Standard

TYPE 384		3 WAY NORMALLY OPEN			"8" SERIES		
CATALOG NO. CONDUIT HOUSING	CATALOG NO. GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL A-C & D-C
			INLET	EXHAUST	INLET	EXHAUST	
38401	38481	$\frac{1}{8}$ in.	$\frac{3}{64}$ in.	$\frac{3}{64}$ in.	.05	.05	150
38402	38482	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	$\frac{1}{16}$ in.	.09	.12	115
38403	38483	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	$\frac{3}{32}$ in.	.09	.20	100
38404	38484	$\frac{1}{8}$ in.	$\frac{1}{16}$ in.	$\frac{1}{8}$ in.	.09	.30	75

GOULD ALLIED CONTROL

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GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil

BODY

- BX Stainless Steel Body
- BD Bottom Outlet (Body)
- BF Brass with 1/8" NPTF

METERING

- MS Side Metering

HOUSING

- HB Strap Housing
(Not initially available)

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 38481 120-VAC 60-cycles which designates a 3-way Normally-Open valve with 3/64 in. Orifice, 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BXMS-38481 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body, Side Metering.

Specify vacuum if valves are to be used on VAC.

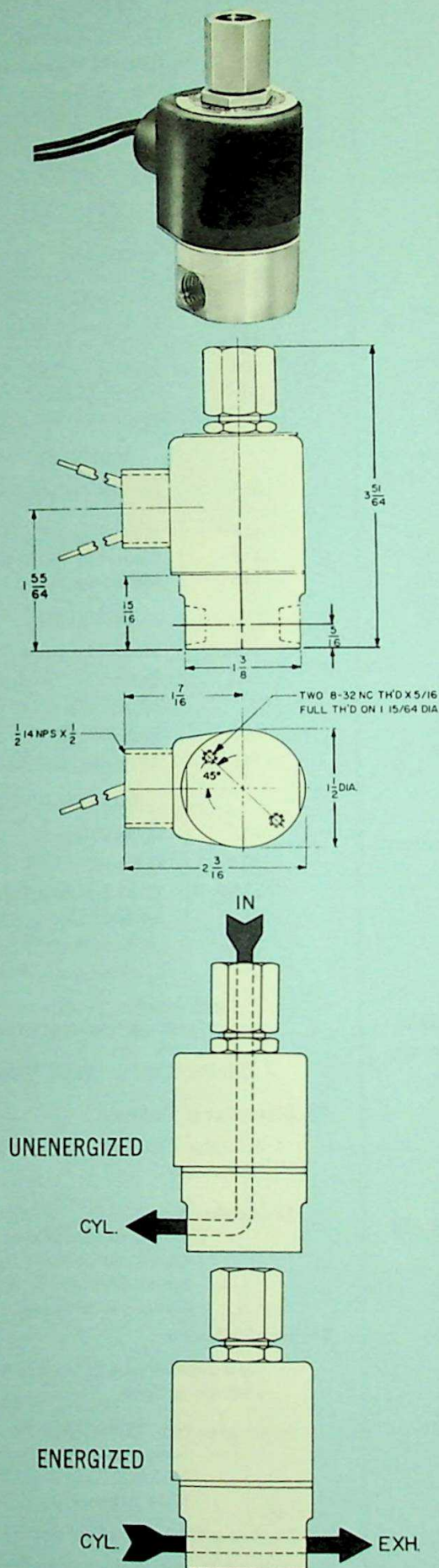
* Can only be supplied with an open strap housing.

For Application Assistance
please use Questionnaire, page 91.

"O" SERIES

3 WAY NORMALLY OPEN SOLENOID VALVE

TYPE
304



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.
U.L. approval on all standard types.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 150
Special; to 250

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: $\frac{3}{64}$ in. to $\frac{3}{32}$ in. (Inlet)

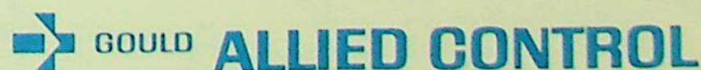
Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 7 ounces

TYPE 304		3 WAY NORMALLY OPEN				"O" SERIES		
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL
				INLET	EXHAUST	INLET	EXHAUST	AC DC
30401		30481	$\frac{1}{8}$ in.	$\frac{1}{16}$	$\frac{3}{64}$	0.08	0.05	150 150
30402		30482	" "	$\frac{1}{16}$	$\frac{1}{16}$	0.08	0.12	125 125
30403		30483	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.12	0.21	75 50
30404		30484	" "	$\frac{3}{32}$	$\frac{1}{8}$	0.12	0.32	65 40
30405		30485	" "	$\frac{3}{32}$	$\frac{5}{32}$	0.12	0.40	50 20
30406		30486	" "	$\frac{3}{32}$	$\frac{3}{16}$	0.12	0.50	30 10
30407		30487	" "	$\frac{3}{32}$	$\frac{1}{4}$	0.12	0.70	25 0
30408		30488	" "	$\frac{3}{64}$	$\frac{3}{32}$	0.05	0.21	125 100
30411		30491	$\frac{1}{4}$ in.	$\frac{1}{16}$	$\frac{3}{64}$	0.08	0.05	150 150
30412		30492	" "	$\frac{1}{16}$	$\frac{1}{16}$	0.08	0.12	125 125
30413		30493	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.12	0.21	75 50
30414		30494	" "	$\frac{3}{32}$	$\frac{1}{8}$	0.12	0.32	65 40
30415		30495	" "	$\frac{3}{32}$	$\frac{5}{32}$	0.12	0.40	50 20
30416		30496	" "	$\frac{3}{32}$	$\frac{3}{16}$	0.12	0.50	30 10
30417		30497	" "	$\frac{3}{32}$	$\frac{1}{4}$	0.12	0.70	25 0
30418		30498	" "	$\frac{3}{64}$	$\frac{3}{32}$	0.05	0.21	125 100

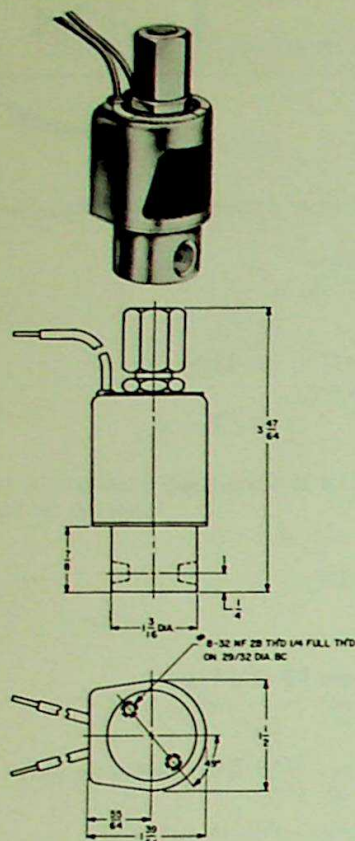
DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$



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TYPE BM-304

3-WAY NORMALLY-OPEN
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 304 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

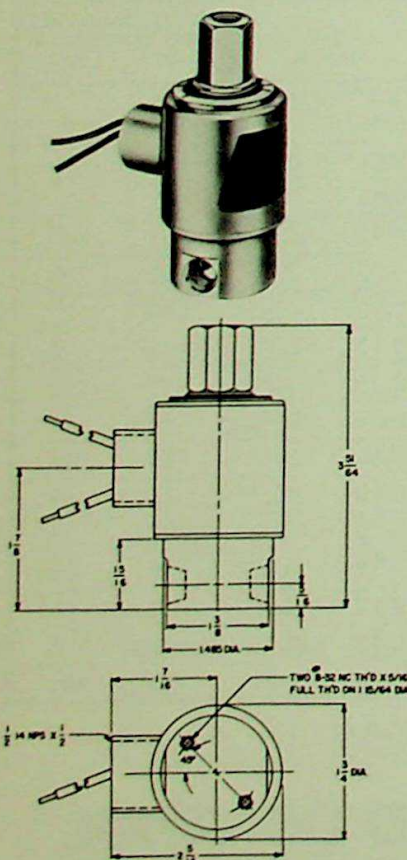
Orifice Diameter: 3/4 in. to 5/32 in.

Porting: 1/8 in. NPTF

Weight: 15 ounces (approx.)

TYPE HH-304

3-WAY NORMALLY-OPEN
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 304 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps
Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-304

NOISELESS AC OPERATION

3-WAY NORMALLY-OPEN RECTIFIED COIL

Characteristics: Same as std. type 304 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size		Average Cv Factor		Max. Pressure PSI
Inlet	Exhaust	Inlet	Exhaust	
1/16	3/64	0.08	0.05	150
1/16	1/16	0.08	0.12	125
3/32	3/32	0.12	0.21	75
3/32	1/8	0.12	0.32	65
3/32	3/32	0.12	0.40	50
3/32	3/16	0.12	0.50	30
3/32	1/4	0.12	0.70	25
3/64	3/32	0.05	0.21	125

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

BODY	
BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BH	Hexagonal Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless Steel)

METERING	
MA	Metering Adapter
MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side

HOUSING	
HB	Strap Housing
HH	Explosion Proof
HJ	JIC Housing
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS	
RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
U	Underwriters' Approval
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 30492 120-VAC 60-cycles which designates a 3-way Normally-Open valve with 1/16 in. inlet and exhaust Orifices, 1/4 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BBMS-30492 120/60 Same as example No. 1 except: Molded coil, Brass Body, Side Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix

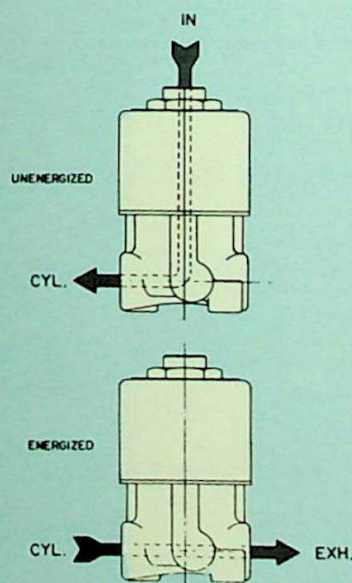
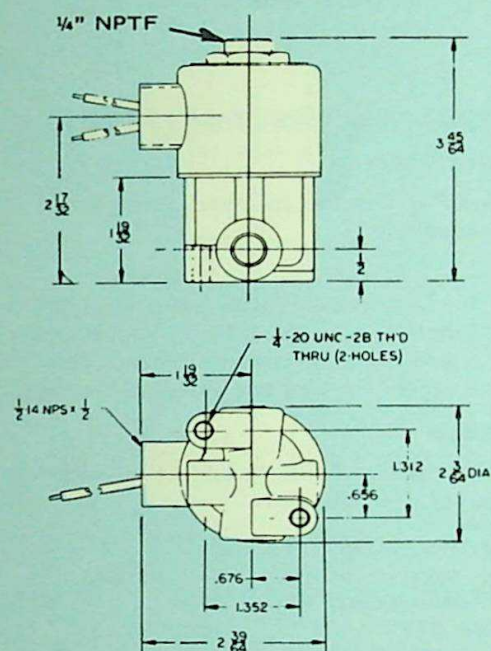
(a) **Example:** No. U-30492 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required, No. 1U-30492 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.
For Application Assistance, Please Use Questionnaire on page 91.

3-WAY NORMALLY OPEN SOLENOID VALVE

TYPE
354



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
 Special; -60°F to $+350^{\circ}\text{F}$
 $(-51^{\circ}\text{C}$ to $+177^{\circ}\text{C})$

Maximum Operating Pressure Differential:

Standard; Vacuum to 275 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
 6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}\text{C}$
 Special; to $+200^{\circ}\text{C}$

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: $3/32''$ to $3/16''$ (Inlet)

Porting: $1/4''$ NPTF & $3/8''$ NPTF

Housing: $1/2$ in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 2.5 lbs.

TYPE 354		3-WAY NORMALLY OPEN SOLENOID VALVE				2" SERIES	
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES	AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)
					EXHAUST	EXHAUST	
35401	35481	1/4"	3/32"	3/32"	.25	.25	275
35402	35482	1/4"	1/8"	1/8"	.35	.35	175
35403	35483	1/4"	5/32"	5/32"	.45	.45	125
35404	35484	1/4"	3/16"	3/16"	.50	.50	75
35405	35485	1/4"	3/16"	1/4"	.50	.75	50
35406	35486	1/4"	3/16"	5/16"	.50	1.10	40
35407	35487	1/4"	3/16"	3/8"	.50	1.95	30
35411	35491	3/8"	3/32"	3/32"	.25	.25	275
35412	35492	3/8"	1/8"	1/8"	.35	.35	175
35413	35493	3/8"	5/32"	5/32"	.45	.45	125
35414	35494	3/8"	3/16"	3/16"	.50	.50	75
35415	35495	3/8"	3/16"	1/4"	.50	.75	50
35416	35496	3/8"	3/16"	5/16"	.50	1.10	40
35417	35497	3/8"	3/16"	3/8"	.50	1.95	30

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/64$

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps
Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil
	HOUSING
HR	Strain Relief

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 35411 120-VAC 60-cycles
which designates a 3-way normally open valve with 3/32 in. inlet orifice and 3/32 in. exhaust Orifice, 3/8 in. NPTF Porting and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-35411 120/60
same as example No. 1 except Waterproof Coil.

Specify vacuum if valves are to be used on VAC.

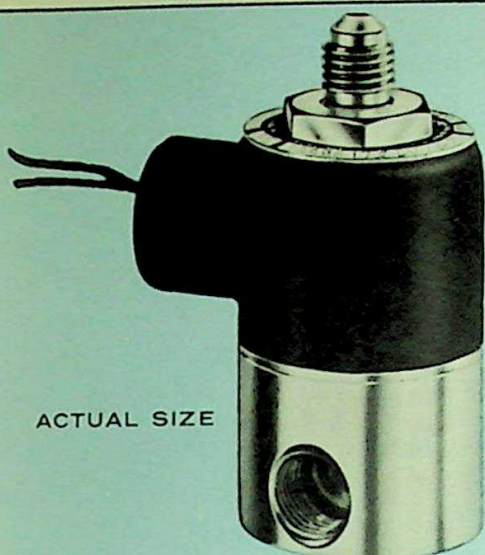
For Application Assistance, Please Use Questionnaire on page 91.

"1" SERIES

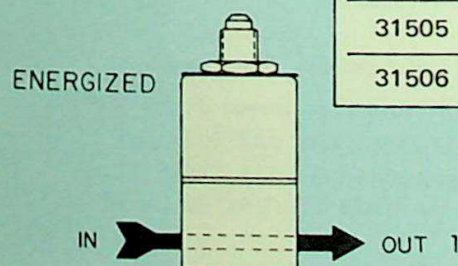
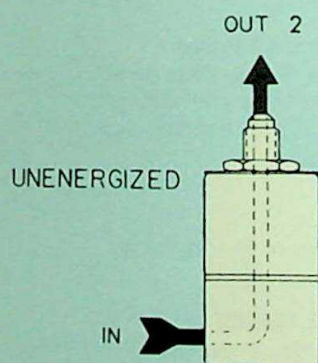
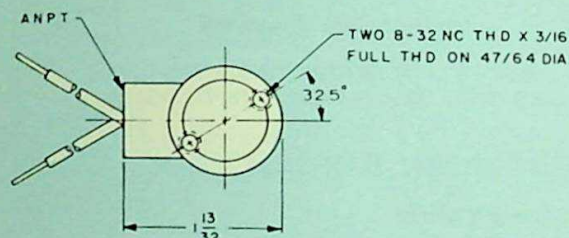
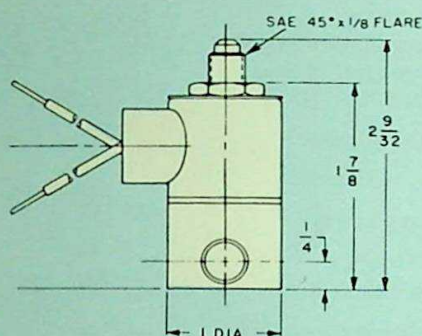
3-WAY DIRECTIONAL SOLENOID VALVE

TYPE

315



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 225

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel

Orifice Diameter: $\frac{1}{32}$ in. to $\frac{1}{8}$ in. (Inlet)

Porting: $\frac{1}{8}$ in. NPTF

Housing: $\frac{1}{4}$ in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum

TYPE 315		3-WAY DIRECTIONAL SOLENOID VALVE						1" SERIES	
CATALOG NO.		ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)			
CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	INLET	EXHAUST	INLET	EXHAUST	A-C	D-C	
31501	31581	1/8"	1/32"	1/32"	.019	.019	225	225	
31502	31582	1/8"	3/64"	3/64"	.046	.046	150	150	
31503	31583	1/8"	1/16"	3/64"	.080	.046	100	100	
31504	31584	1/8"	1/16"	1/16"	.080	.080		75	
31505	31585	1/8"	3/32"	3/64"	.170	.046	50	50	
31506	31586	1/8"	1/8"	3/64"	.240	.046	25	25	



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Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "I" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
	COIL
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
PF	Stop Adapter

	BODY
BB	Brass Body
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BF	Brass, 1/16" NPTF

	METERING
MB	Metering Bottom

	HOUSING
HA	1/2" Conduit
HB	Strap Housing

	MISCELLANEOUS
U	Underwriters' Approval

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 31581 120-VAC 60-cycles
which designates a 3-way directional valve with 1/32 in. inlet and exhaust Orifices, 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-BBMB 31581 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Bottom Metering

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-31581 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-31581 120/VAC 60-cycles

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing or a special slotted housing.

For Application Assistance, Please Use Questionnaire on page 91.

"8" SERIES

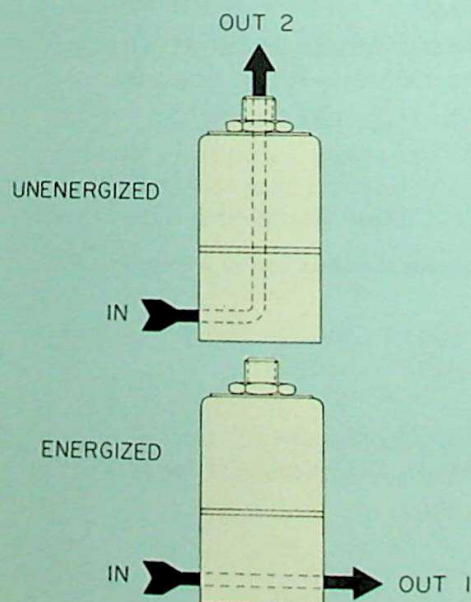
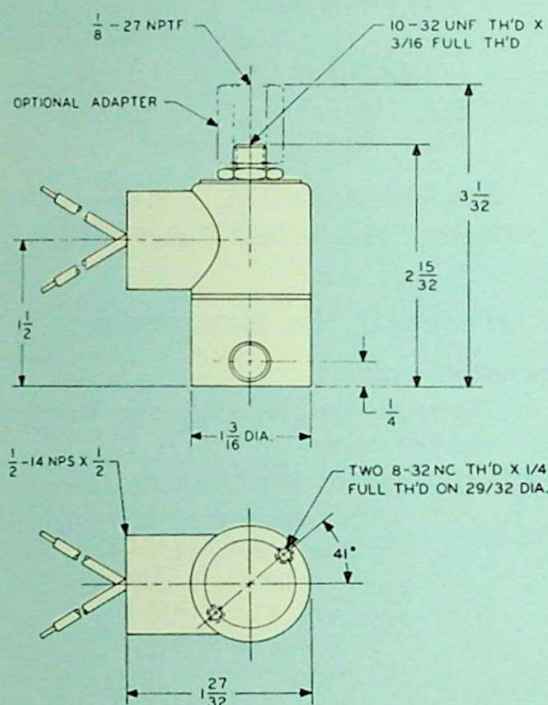
3-WAY DIRECTIONAL SOLENOID VALVE

TYPE

385



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential:
Standard; 0 to 175

Burst Pressure: 6000psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7.5 watts (nom.)

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard: Brass

Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{8}$ in. (inlet)

Porting: $\frac{1}{8}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet

Weight: 8.0 ounces maximum

Compensating Plunger with Viton top seal: Standard

TYPE 385		3-WAY DIRECTIONAL SOLENOID VALVE				"8" SERIES	
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI) A-C & D-C
			INLET	EXHAUST	INLET	EXHAUST	
38501	38581	$\frac{1}{8}$ "	$\frac{3}{64}$ "	$\frac{3}{64}$ "	.05	.05	175
38502	38582	$\frac{1}{8}$ "	$\frac{1}{16}$ "	$\frac{1}{16}$ "	.12	.09	125
38503	38583	$\frac{1}{8}$ "	$\frac{3}{32}$ "	$\frac{1}{16}$ "	.20	.09	75
38504	38584	$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{16}$ "	.30	.09	50

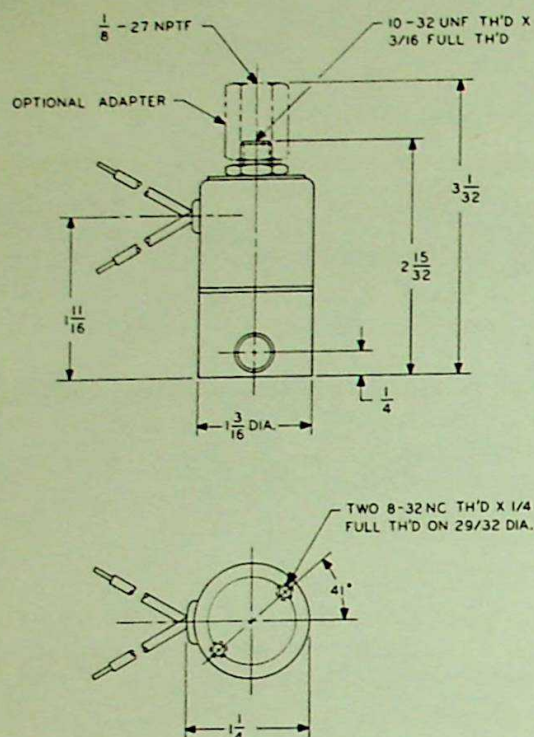


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Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil
- PF Stop Adapter

BODY

- BX Stainless Steel Body
- BD Bottom Outlet (Body)
- BE Bottom Inlet (Body)
- BF Brass with 1/16" NPTF

METERING

- MS Side Metering

HOUSING

- HB Strap Housing
(Not initially available)

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 38581 120-VAC 60-cycles which designates a 3-way directional valve with 3/4 in. inlet and exhaust Orifices 1/8 in. NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1BXMS-38581 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body, and Side Metering

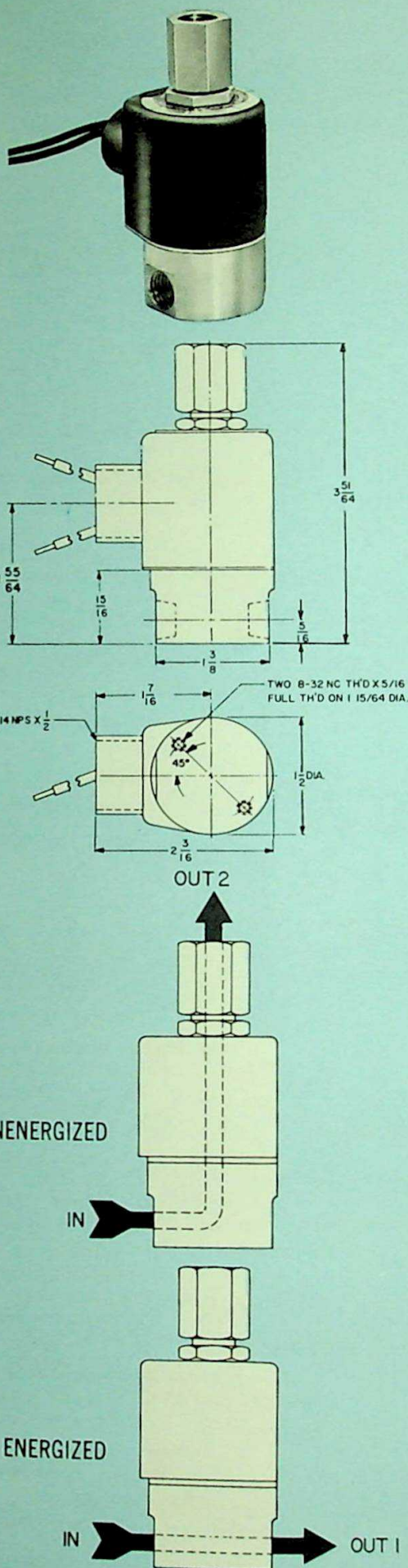
Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap housing.

For Application Assistance,
please use Questionnaire, page 91.

3 WAY DIRECTIONAL SOLENOID VALVE

TYPE
305



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.
U.L. approval on all standard types.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
Optional; Brass

Orifice Diameter: $\frac{3}{4}$ in. to $\frac{1}{4}$ in. (Inlet)

Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 7 ounces

TYPE 305		3 WAY DIRECTIONAL					"O" SERIES	
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL AC DC	
			ENER- GIZED	UNENER- GIZED	ENER- GIZED	UNENER- GIZED		
30501	30581	⅛ in.	¾	⅙	0.05	0.08	200	200
30502	30582	" "	⅙	⅙	0.12	0.08	150	150
30503	30583	" "	⅜	⅜	0.21	0.12	125	125
30504	30584	" "	⅛	⅜	0.32	0.12	100	100
30505	30585	" "	⅝	⅜	0.40	0.12	75	65
30506	30586	" "	⅜	⅜	0.50	0.12	60	25
30507	30587	" "	¼	⅜	0.70	0.12	20	0
30508	30588	" "	⅜	¾	0.21	0.05	150	150
30511	30591	¼ in.	¾	⅙	0.05	0.08	200	200
30512	30592	" "	⅙	⅙	0.12	0.08	150	150
30513	30593	" "	⅜	⅜	0.21	0.12	125	125
30514	30594	" "	⅛	⅜	0.32	0.12	100	100
30515	30595	" "	⅝	⅜	0.40	0.12	75	65
30516	30596	" "	⅜	⅜	0.50	0.12	60	25
30517	30597	" "	¼	⅜	0.70	0.12	20	0
30518	30598	" "	⅜	¾	0.21	0.05	150	150

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$



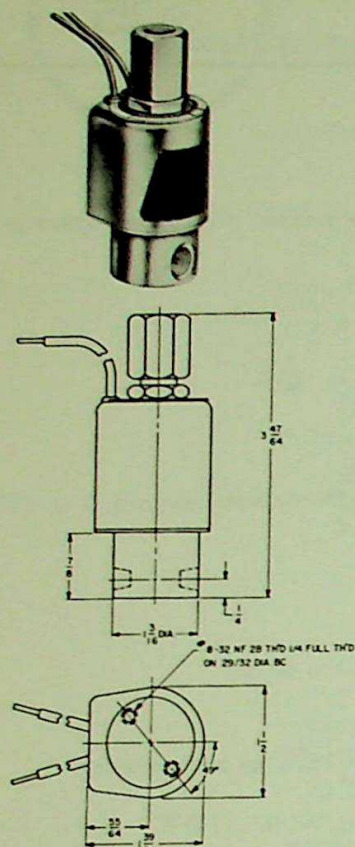
GOULD

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100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE BM-305

3-WAY DIRECTIONAL
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 305 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

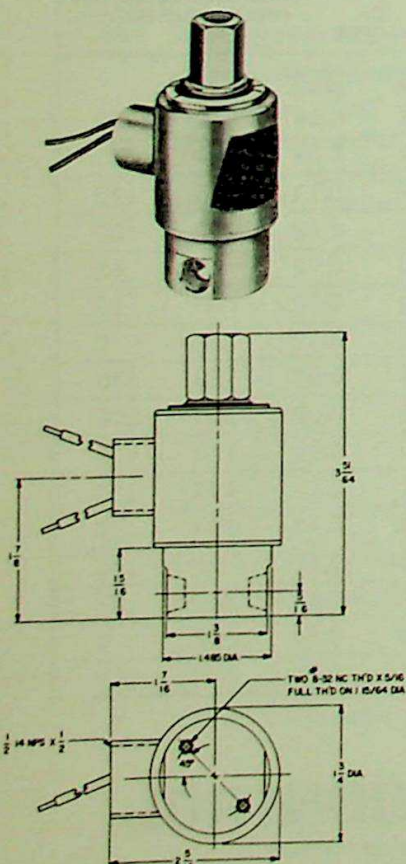
Orifice Diameter: $\frac{3}{4}$ in. to $\frac{5}{32}$ in.

Porting: $\frac{1}{8}$ in. NPTF

Weight: 15 ounces (approx.)

TYPE HH-305

3-WAY DIRECTIONAL
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



48 **Characteristics:** Same as standard type 305 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps

Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-305

NOISELESS AC OPERATION

3-WAY DIRECTIONAL RECTIFIED COIL

Characteristics: Same as std. type 305 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size		Average Cv Factor		Max. Pressure PSI
Unener- gized	Ener- gized	Unener- gized	Ener- gized	
$\frac{1}{16}$	$\frac{3}{64}$	0.08	0.05	200
$\frac{1}{16}$	$\frac{1}{16}$	0.08	0.12	150
$\frac{3}{32}$	$\frac{3}{32}$	0.12	0.21	125
$\frac{3}{32}$	$\frac{1}{8}$	0.12	0.32	100
$\frac{3}{32}$	$\frac{3}{32}$	0.12	0.40	75
$\frac{3}{32}$	$\frac{3}{16}$	0.12	0.50	60
$\frac{3}{32}$	$\frac{1}{4}$	0.12	0.70	20
$\frac{3}{64}$	$\frac{3}{32}$	0.05	0.21	150

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil
	BODY
BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BE	Bottom Inlet
BH	Hexagon Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless Steel)

METERING

MA	Metering Adapter
MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side
MV	Metering Adapter—Free Venting

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	JIC Housing
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
U	Underwriters' Approval
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 30592 120-VAC 60-cycles
which designates a 3-way Directional
valve with $\frac{1}{16}$ in. Orifices, $\frac{1}{4}$ in.
NPTF Porting and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves
with variations.

Example: No. 1BBMS-30592 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Side Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U-30592 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U-30592 120/VAC 60-cycles.

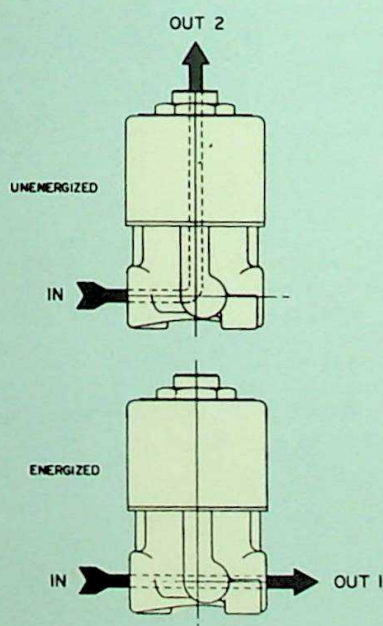
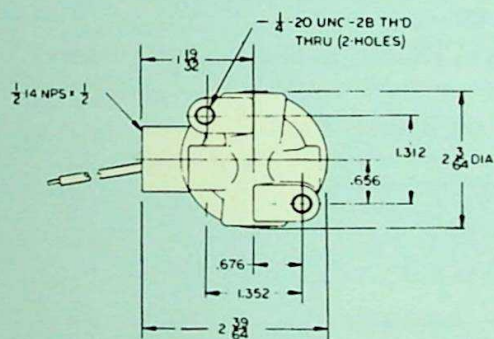
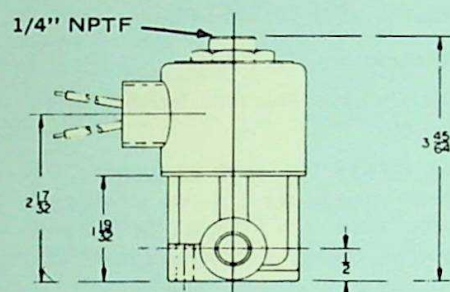
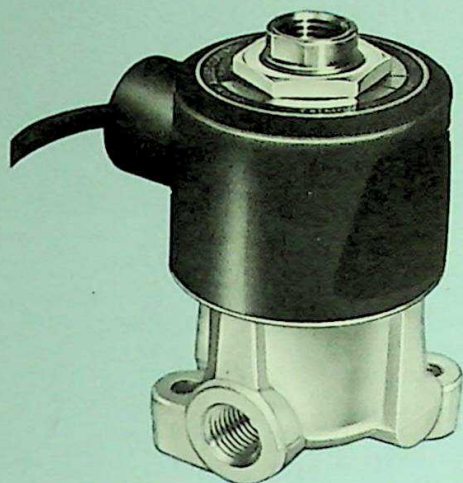
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire
on page 91.

"2" SERIES

3-WAY DIRECTIONAL SOLENOID VALVE

TYPE
355



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
 Special; -60°F to $+350^{\circ}\text{F}$
 $(-51^{\circ}\text{C}$ to $+177^{\circ}\text{C})$

Maximum Operating Pressure Differential:

Standard; Vacuum to 200 PSI
 Special to 500 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
 6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}\text{C}$
 Special; to $+200^{\circ}\text{C}$

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: $3/32"$ to $3/8"$ (Inlet)

Porting: $1/4"$ NPTF & $3/8"$ NPTF

Housing: $1/2$ in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 2.5 lbs.

TYPE 355		3-WAY DIRECTIONAL SOLENOID VALVE						2" SERIES
CATALOG NO.		PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)	
CONDUIT HOUSING	GROMMET HOUSING		INLET	EXHAUST	INLET	EXHAUST	A-C & D-C	
35501	35581	1/4"	3/32	3/32	0.25	0.25	200	
35502	35582	1/4"	1/8	1/8	0.35	0.35	175	
35503	35583	1/4"	5/32	5/32	0.45	0.45	125	
35504	35584	1/4"	3/16	3/16	0.50	0.50	75	
35505	35585	1/4"	1/4	3/16	0.75	0.50	60	
35506	35586	1/4"	5/16	3/16	0.10	0.50	40	
35507	35587	1/4"	3/8	3/16	1.95	0.50	20	
35511	35591	3/8"	3/32	3/32	0.25	0.25	200	
35512	35592	3/8"	1/8	1/8	0.35	0.35	175	
35513	35593	3/8"	5/32	5/32	0.45	0.45	125	
35514	35594	3/8"	3/16	3/16	0.50	0.50	75	
35515	35595	3/8"	1/4	3/16	0.75	0.50	60	
35516	35596	3/8"	5/16	3/16	1.10	0.50	40	
35517	35597	3/8"	3/8	3/16	1.95	0.50	20	

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/4$



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps

Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil
	HOUSING
HR	Strain Relief

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

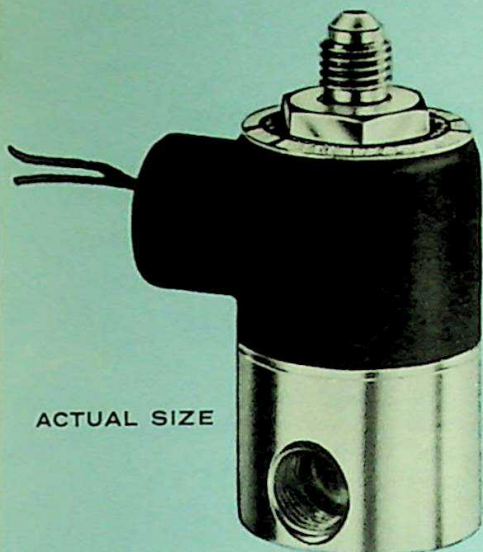
Example: No. 35517 120-VAC 60-cycles which designates a 3-way directional valve with 3/8 in. inlet orifice and 3/16 in. exhaust Orifice, 3/8 in. NPTF Porting and Conduit Housing.

2) Variations:

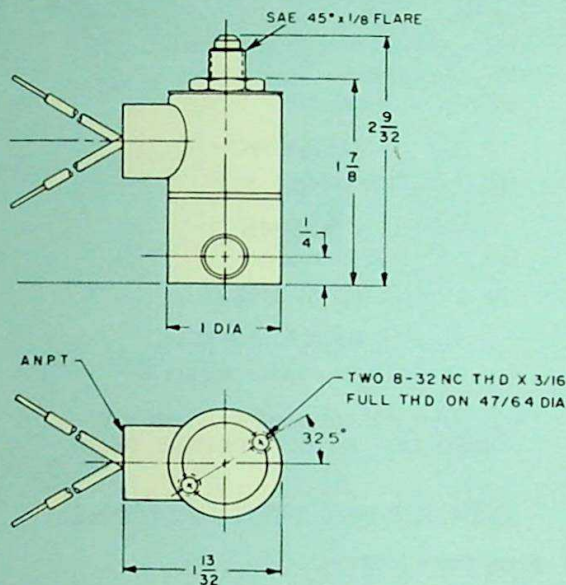
Add prefixes as listed when ordering valves with variations.

Example: No. 1-35517 120/60 same as example No. 1 except Waterproof Coil,

For Application Assistance, Please Use Questionnaire on page 91.



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 100

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

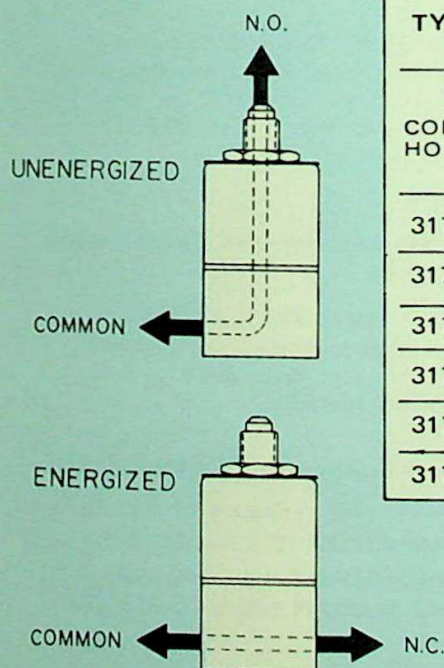
Body: Standard; Stainless Steel

Orifice Diameter: $1/32$ in. to $1/8$ in. (Normally Closed)

Porting: $1/8$ in. NPTF

Housing: $1/4$ in. ANPT Conduit or Grommet

Weight: 6.0 ounces maximum



TYPE 317		3-WAY MULTI-DIRECTIONAL SOLENOID VALVE					"1" SERIES	
CATALOG NO. CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)	
			COMMON	EXHAUST	COMMON	EXHAUST	A-C	D-C
31701	31781	1/8"	1/32"	1/32"	.019	.019	100	100
31702	31782	1/8"	3/64"	3/64"	.046	.046	90	90
31703	31783	1/8"	1/16"	3/64"	.080	.046	75	75
31704	31784	1/8"	1/16"	1/16"	.080	.080		50
31705	31785	1/8"	3/32"	3/64"	.170	.046	25	25
31706	31786	1/8"	1/8"	3/64"	.240	.046	15	15



GOULD

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100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H
Maximum "on" and minimum "off" time, maximum
media and ambient temperatures must be specified
when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "I" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.215 amps Holding 0.100 amps
Inrush and Holding current of standard 120 volt
d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless
otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves
are available:

For details refer to the optional variation sheet page
85.

PREFIX	DESCRIPTION
	COIL
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
PF	Stop Adapter

	BODY
BB	Brass Body
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BF	Brass, 1/16" NPTF

	METERING
MB	Metering Bottom

	HOUSING
HA	1/2" Conduit
HB	Strap Housing

	MISCELLANEOUS
U	Underwriters' Approval

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and
Frequency.

Example: No. 31781 120-VAC 60 cycles
which designates a 3-way multi-direct-
ional valve with 1/32 in. inlet and
exhaust Orifices, 1/8 in. NPTF Porting
and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves
with variations.

Example: No. 1-BBMB 31781 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Bottom Metering.

3) Underwriters Laboratory Approval:

For Underwriters Laboratory approval add Prefix U.

(a) **Example:** No. U31781 120/VAC 60-cycles.

(b) **Example:** When Molded coil is required,
No. 1U31781 120/VAC 60-cycles.

Specify vacuum if valves are to be used on VAC.

* Can only be supplied with an open strap
housing or a special slotted housing.

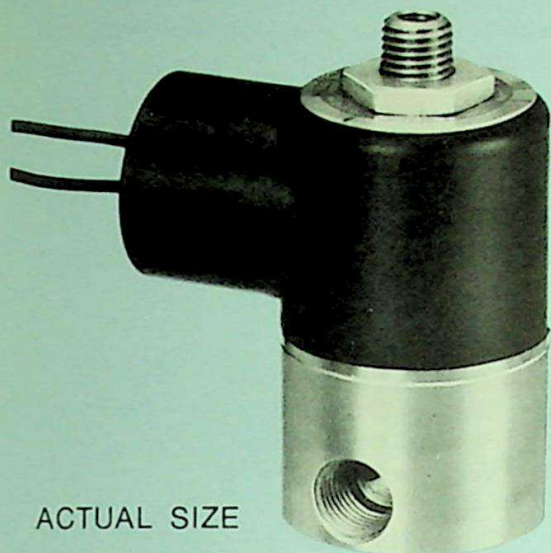
For Application Assistance, Please Use Questionnaire
on page 91.

"8" SERIES

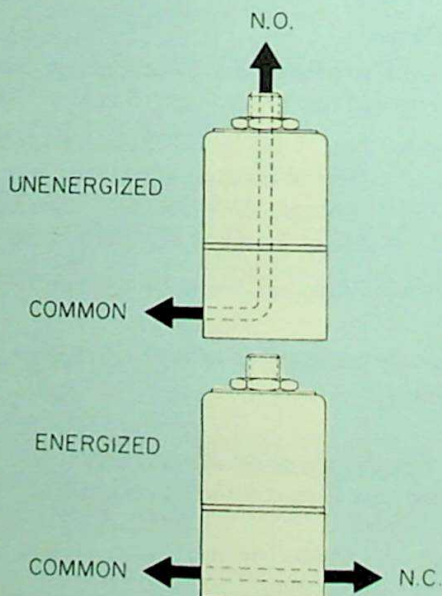
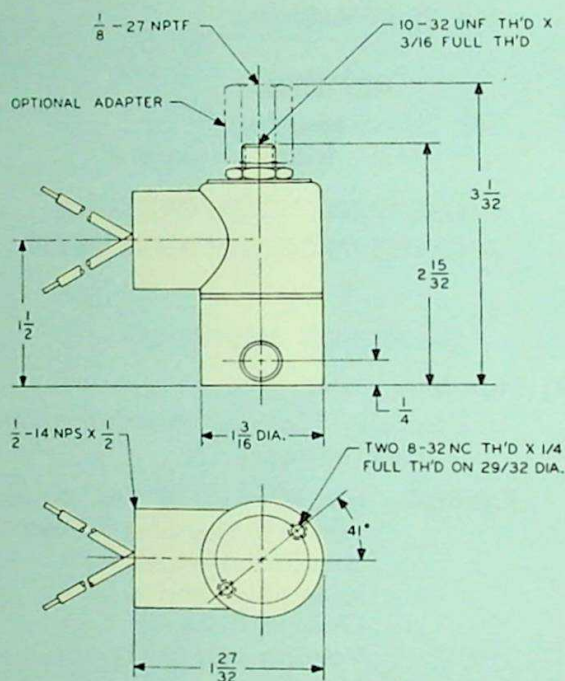
3-WAY MULTI-DIRECTIONAL SOLENOID VALVE

TYPE

387



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
 Standard; 0 to 125
Burst Pressure: 6000psi
Leakage: Standard; bubble tight
Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
 Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

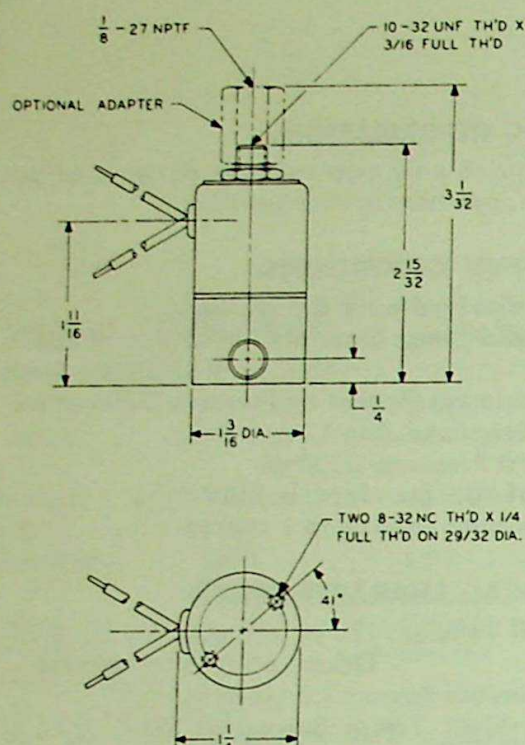
MECHANICAL CHARACTERISTICS:

Body: Standard: Brass
Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{8}$ in. (Normally Closed)
Porting: $\frac{1}{8}$ in. NPTF
Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Weight: 8.0 ounces maximum
Compensating Plunger with Viton top seal: Standard

TYPE 387		3-WAY MULTI-DIRECTIONAL SOLENOID VALVE				"8" SERIES	
CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI) A-C & D-C
			COMMON	EXHAUST	COMMON	EXHAUST	
38701	38781	$\frac{1}{8}$ "	$\frac{3}{64}$ "	$\frac{3}{64}$ "	.05	.05	125
38702	38782	$\frac{1}{8}$ "	$\frac{1}{16}$ "	$\frac{1}{16}$ "	.12	.09	75
38703	38783	$\frac{1}{8}$ "	$\frac{3}{32}$ "	$\frac{1}{16}$ "	.20	.09	50
38704	38784	$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{16}$ "	.30	.09	30

GOULD ALLIED CONTROL
 Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION

COIL

- *1 Class B Molded Coil
(Not initially available)
- 2 Class H Vacuum Impregnated Coil
- PF Stop Adapter

BODY

- BX Stainless Steel Body
- BD Bottom Outlet (Body)
- BE Bottom Inlet (Body)
- BF Brass with $\frac{1}{16}$ " NPTF

METERING

- MS Side Metering

HOUSING

- HB Strap Housing
(Not initially available)

**USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 38781 120-VAC 60-cycles which designates a 3-way Multi-directional valve with $\frac{3}{4}$ in. inlet and exhaust Orifices $\frac{1}{8}$ in. NPTF Porting and Grommet Housing.

2) Variations:

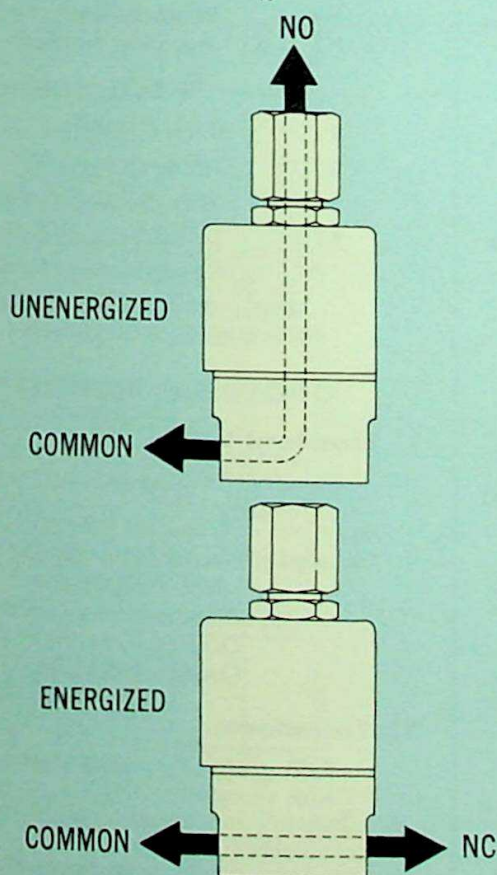
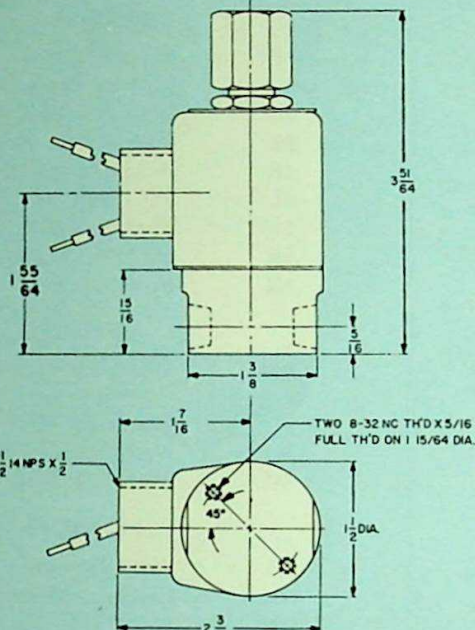
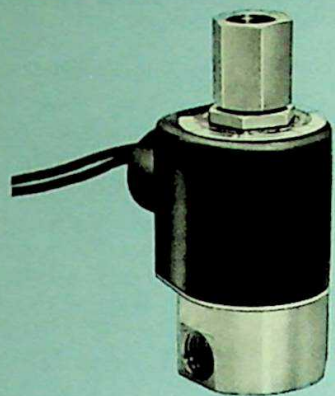
Add prefixes as listed when ordering valves with variations.

Example: No. 1-BXMS 38781 120/60 Same as example No. 1 except: Molded Coil, Stainless Steel Body, and Side Metering

Specify vacuum if valves are to be used on VAC.

- * Can only be supplied with an open strap housing.

For Application Assistance,
please use Questionnaire, page 91.



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
 Special; -60°F to $+350^{\circ}\text{F}$
 $(-51^{\circ}\text{C}$ to $+177^{\circ}\text{C})$

Maximum Operating Pressure Differential: Standard; 0 to 150
 Special; to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
 6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
 Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
 Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard; Stainless Steel
 Optional; Brass

Orifice Diameter: $\frac{3}{4}$ in. to $\frac{3}{16}$ in. (Normally Closed)

Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
 Explosion Proof; NEMA VII, IX, IXA

Weight: From 1 lb. to 1 lb. 7 ounces

TYPE 307		3-WAY MULTI-DIRECTIONAL				"O" SERIES		
CATALOG NO.	CONDUIT GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL	
			NC	NO	NC	NO	AC	DC
30701	30781	$\frac{1}{8}$ in.	$\frac{3}{4}$	$\frac{1}{16}$	0.05	0.08	150	125
30702	30782	" "	$\frac{1}{16}$	$\frac{1}{16}$	0.12	0.08	100	100
30703	30783	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.21	0.12	75	50
30704	30784	" "	$\frac{1}{8}$	$\frac{3}{32}$	0.32	0.12	50	25
30705	30785	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.40	0.12	25	5
30706	30786	" "	$\frac{3}{16}$	$\frac{3}{32}$	0.50	0.12	15	
30708	30788	" "	$\frac{3}{32}$	$\frac{3}{4}$	0.21	0.05	75	50
30711	30791	$\frac{1}{4}$ in.	$\frac{3}{4}$	$\frac{1}{16}$	0.05	0.08	150	125
30712	30792	" "	$\frac{1}{16}$	$\frac{1}{16}$	0.12	0.08	100	100
30713	30793	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.21	0.12	75	50
30714	30794	" "	$\frac{1}{8}$	$\frac{3}{32}$	0.32	0.12	50	25
30715	30795	" "	$\frac{3}{32}$	$\frac{3}{32}$	0.40	0.12	25	5
30716	30796	" "	$\frac{3}{16}$	$\frac{3}{32}$	0.50	0.12	15	
30718	30798	" "	$\frac{3}{32}$	$\frac{3}{4}$	0.21	0.05	75	50

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$



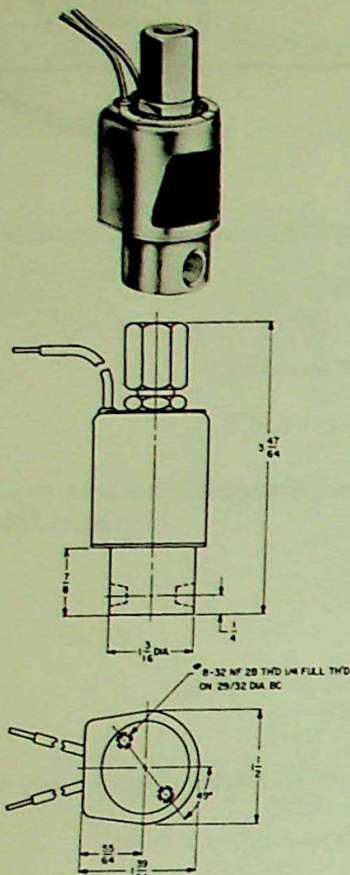
GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

TYPE BM-307

3-WAY MULTI-DIRECTIONAL
BRASS MINIATURE BODY
LOW COST—COMPACT DESIGN



Characteristics: same as standard type 307 except:

Media Temperature: Standard
—45°F to +150°F (—43°C to +65°C)

Body: Brass, Miniature

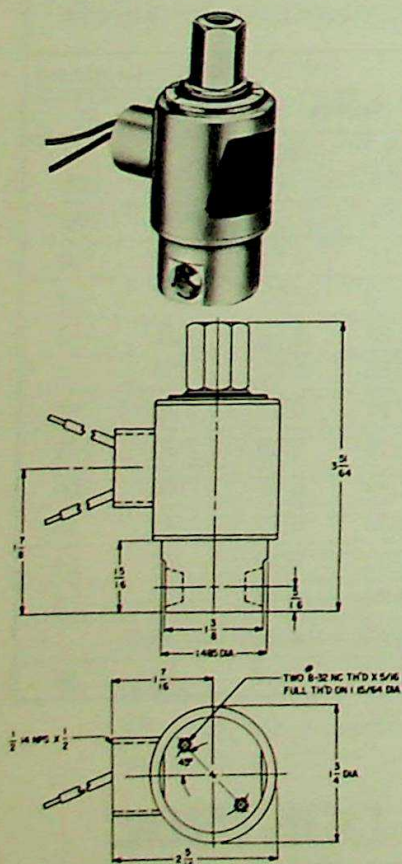
Orifice Diameter: 3/64 in. to 5/32 in.

Porting: 1/8 in. NPTF

Weight: 15 ounces (approx.)

TYPE HH-307

3-WAY MULTI-DIRECTIONAL
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 307 valve.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.380 amps Holding 0.230 amps

Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-307

NOISELESS AC OPERATION

3-WAY MULTI-DIRECTIONAL RECTIFIED COIL

Characteristics: Same as std. type 203 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Orifice Size		Average Cv Factor		Max. Pressure PSI
NC	NO	NC	NO	
3/64	1/16	0.05	0.08	130
1/16	1/16	0.12	0.08	105
3/32	3/32	0.21	0.12	50
1/8	3/32	0.32	0.12	25
3/32	3/32	0.40	0.12	5
3/32	3/64	0.21	0.05	90

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

For details refer to the optional variation sheet page 85.

PREFIX

DESCRIPTION

COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

BODY

BB	Brass Body
BC	Manual Over-Ride
BD	Bottom Outlet (Body)
BE	Bottom Inlet (Body)
BH	Hexagonal Body
BL	90° Port Left
BM	Miniature Body (Brass)
BR	90° Port Right
BX	Miniature Body (Stainless Steel)

METERING

MA	Metering Adapter
MF	Metering 45°
MP	Metering By-Pass
MS	Metering Side

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	J. I. C.
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
CP	Compensating Plunger

USE PREFIX WHEN ORDERING
AND LIST IN CONSECUTIVE ORDER

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 30792 120-VAC 60-cycles
which designates a 3-way Multi-
Directional valve with 1/16 in. x 1/16 in.
Orifices, 1/4 in. NPTF Porting and
Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves
with variations.

Example: No. 1BBMS-30792 120/60
Same as example No. 1 except:
Molded coil, Brass Body,
Side Metering.

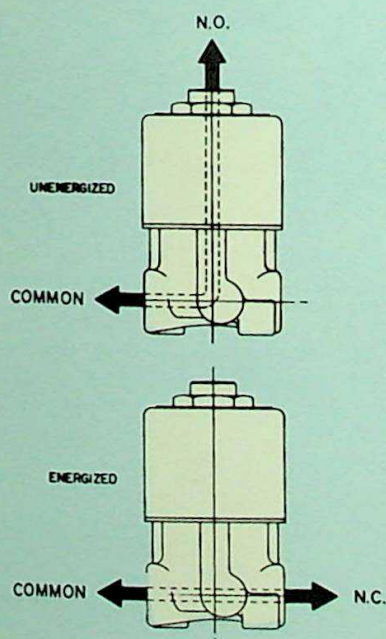
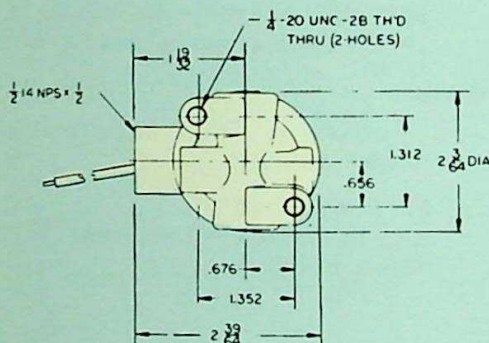
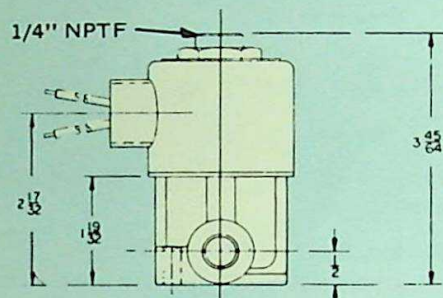
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire
on page 91.

"2" SERIES

3-WAY MULTI-DIRECTIONAL SOLENOID VALVE

TYPE
357



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
 Special; -60°F to $+350^{\circ}\text{F}$
 $(-51^{\circ}\text{C}$ to $+177^{\circ}\text{C})$

Maximum Operating Pressure Differential:

Standard; Vacuum to 150 PSI
 Special to 350 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
 6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}\text{C}$
 Special; to $+200^{\circ}\text{C}$

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Standard Forged Brass

Orifice Diameter: $3/32"$ to $3/8"$ (Normally Closed)

Porting: $1/4"$ NPTF & $3/8"$ NPTF

Housing: $1/2$ in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 2.5 lbs.

TYPE 357		3-WAY MULTI-DIRECTIONAL SOLENOID VALVE				2" SERIES	
CATALOG NO.	CONDUIT HOUSING	GROMMET HOUSING	PIPE SIZE	ORIFICE DIAMETER IN INCHES		Cv FACTOR	MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)
				COMMON	EXHAUST		
35701	35781		1/4"	3/32	3/32	0.25	150
35702	35782		1/4"	1/8	1/8	0.35	110
35703	35783		1/4"	5/32	5/32	0.45	75
35704	35784		1/4"	3/16	3/16	0.50	50
35705	35785		1/4"	1/4"	3/16	0.75	30
35706	35786		1/4"	5/16	3/16	1.10	15
35707	35787		1/4"	3/8	3/16	1.95	10
35711	35791		3/8"	3/32	3/32	0.25	150
35712	35792		3/8"	1/8	1/8	0.35	110
35713	35793		3/8"	5/32	5/32	0.45	75
35714	35794		3/8"	3/16	3/16	0.50	50
35715	35795		3/8"	1/4	3/16	0.75	30
35716	35796		3/8"	5/16	3/16	1.10	15
35717	35797		3/8"	3/8	3/16	1.95	10

DIMENSIONAL TOLERANCES ON FRACTIONS $\pm 1/4$



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
 100 Relay Road, Plantsville, Connecticut 06479
 Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B, & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps

Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil
	HOUSING
HR	Strain Relief

ORDERING INSTRUCTIONS

1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 35717 120-VAC 60-cycles
which designates a 3-way multi-directional valve with 3/8 in. inlet orifice and 3/16 in. exhaust Orifice, 3/8 in. NPTF Porting and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-35717 120/60
same as example No. 1 except Waterproof Coil.

For Application Assistance, Please Use Questionnaire on page 91.

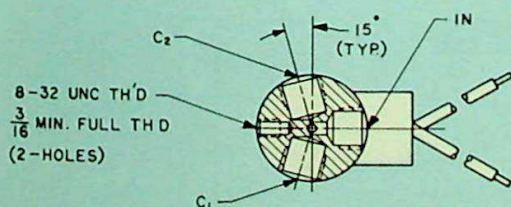
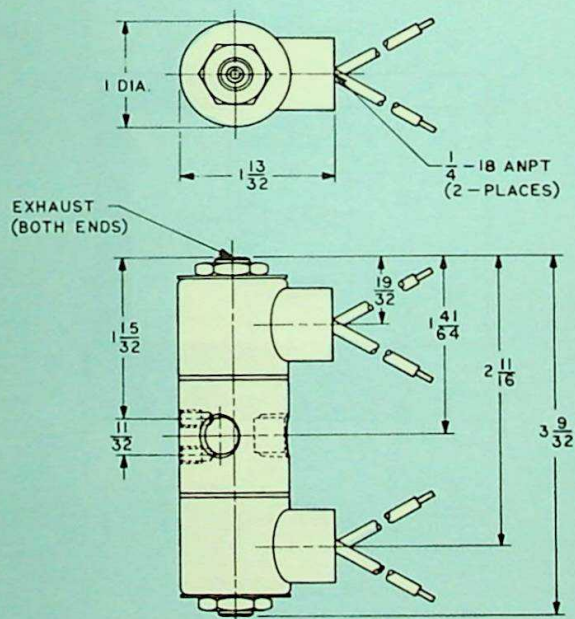
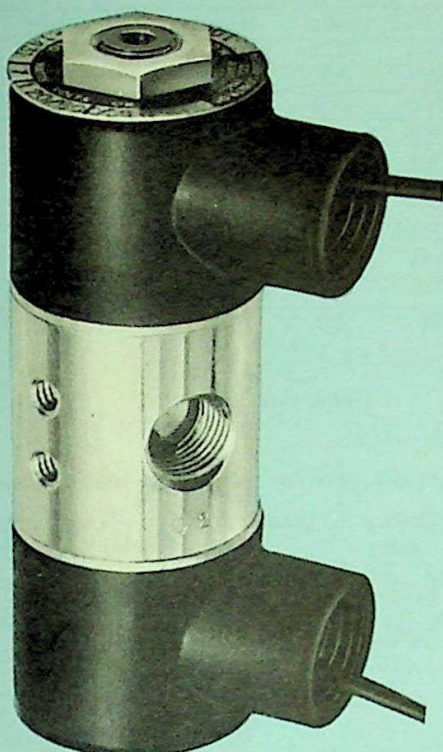
"1" SERIES

4-WAY NORMALLY CLOSED/NORMALLY CLOSED SOLENOID VALVE

TYPE

411

ACTUAL SIZE



GENERAL INFORMATION:

Features only four moving parts, is direct acting of packless construction and operates in any position. Valve operators must be energized alternately for desired sequencing of cylinder. Valve in neutral position when de-energized. May be used for (1) Double Acting Cylinder or (2) Single Acting Cylinders. Conduit Housing may be rotated 270°.

OPERATING CONDITIONS:

Media: Pneumatic

Media Temp: Standard; -45°F to +185°F
(-43°C to +85°C)

Maximum Operating Pressure Differential: Standard; 0 to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. +25°C for continuous duty

Coil Construction: Standard; Class "A" to +110°C

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Body: Brass

Mounting: Standard #8-32 Body Taps

Orifice Diameter: 1/32 in. to 1/8 in. (Inlet)

Porting: 1/8 in. NPTF

Housing: 1/4 in. ANPT Conduit or Grommet

Weight: 12 ounces maximum

"1" SERIES			4-WAY NC/NC SOLENOID VALVE					
CATALOG NO.		PIPE SIZE	ORIFICE DIAMETER IN INCHES		AVERAGE Cv FACTOR		MAXIMUM OPERATING PRESSURE DIFFERENTIAL (PSI)	
CONDUIT HOUSING	GROMMET HOUSING		INLET	EXHAUST	INLET	EXHAUST	A-C	D-C
41101	41181	1/8"	1/32"	1/32"	.019	.019	200	200
41102	41182	1/8"	3/64"	3/64"	.046	.046	150	150
41103	41183	1/8"	1/16"	3/64"	.080	.046	100	100
41104	41184	1/8"	1/16"	1/16"	.080	.080		75
41105	41185	1/8"	3/32"	3/64"	.170	.046	50	50
41106	41186	1/8"	1/8"	3/64"	.240	.046	20	20



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "1" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.215 amps Holding 0.100 amps

Inrush and Holding current of standard 120 volt d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
SV	Viton Seating Compound
RV	Viton O-Rings

ORDERING INSTRUCTIONS

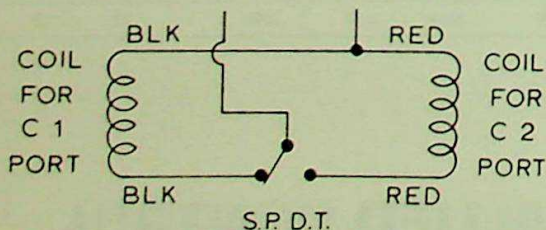
1) Standard Valve:

Specify: Catalog Number, Voltage and Frequency.

Example:

No. 41101 120 VAC 60-cycles
which designates a 4-way Normally-Closed/
Normally Closed valve with 1/32" x 1/32" Orifice,
1/8 in. NPTF Porting and Conduit Housing.

For Application Assistance, Please Use Questionnaire on page 91.



APPROXIMATE OPERATING TIME FOR AIR CYLINDERS

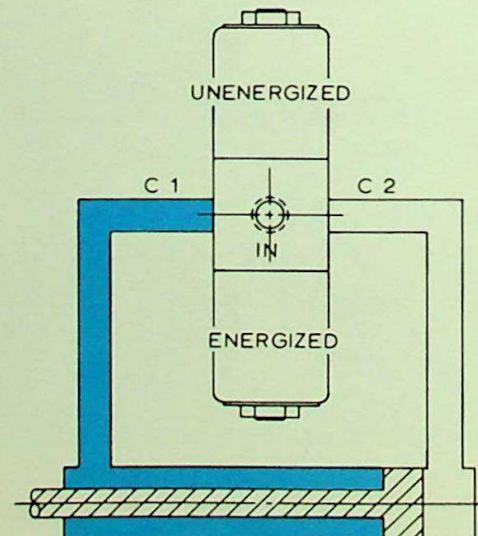
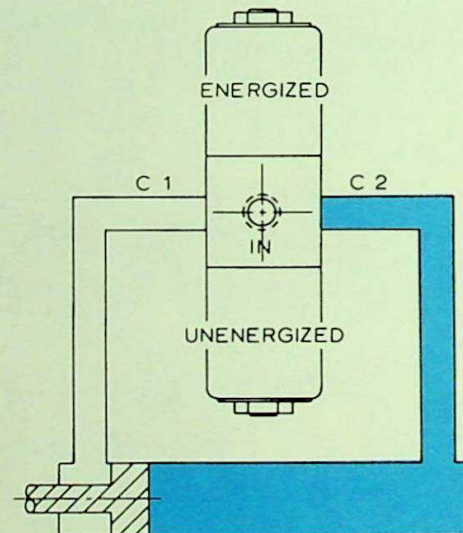
Piston displacement in seconds per inch with
1/16" orifice restriction.

Cylinder diameter in inches	6	5-1/2	5	4-1/2	4	3-1/2	3	2-1/2	2	1-1/2	1
	1.180	.994	.822	.666	.526	.402	.269	.207	.131	.074	.0329
	.992	.834	.690	.557	.441	.337	.247	.173	.110	.062	.0277
	.963	.807	.668	.542	.427	.327	.241	.165	.107	.0602	.0265
	.913	.765	.633	.514	.406	.311	.229	.159	.102	.0571	.0253
	.906	.760	.630	.511	.401	.308	.226	.158	.1004	.0568	.0251
	.884	.742	.613	.497	.393	.301	.220	.154	.0982	.0550	.0244
	25	50	75	100	125	150					

Initial Pressure (PSIG)

Correction Factor for other additional Orifices:

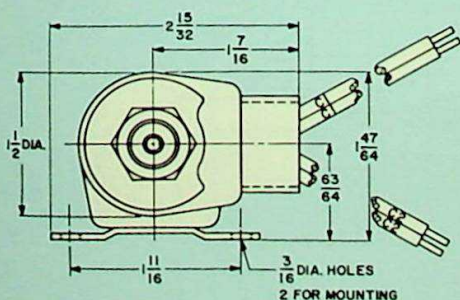
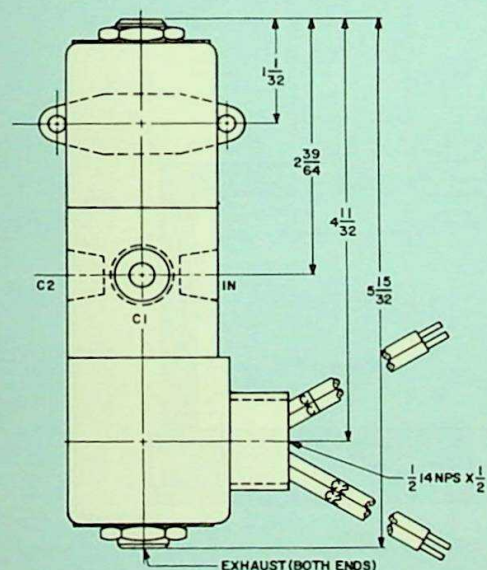
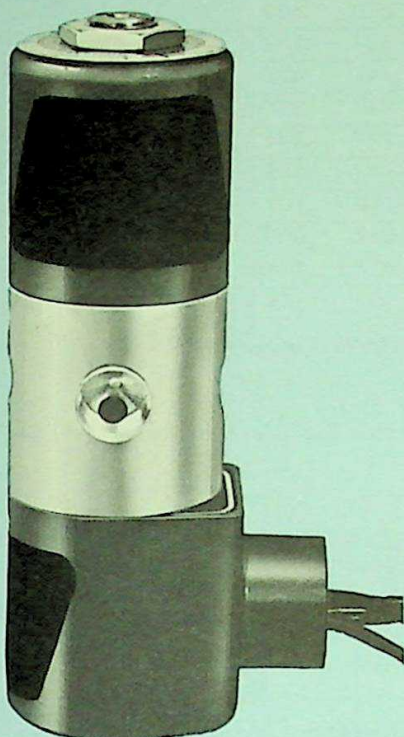
Orifice Size	Time Correction Factor for Orifices other than 1/16"
3/64"	1.8
1/16"	1
3/32"	.53
1/8"	.33



"O" SERIES

4 WAY NORMALLY CLOSED / NORMALLY CLOSED SOLENOID VALVE

TYPE
401



GENERAL INFORMATION:

Features only four moving parts, is direct acting of packless construction and operates in any position. Valve operators must be energized alternately for desired sequencing of cylinder. Valve in neutral position when de-energized. May be used for (1) Double Acting Cylinder or (2) Single Acting Cylinders. Conduit Housing may be rotated 270°.

OPERATING CONDITIONS:

Media: Pneumatic

Media Temp: Standard: -45°F to +185°F
(-43°C to +85°C)
Special: -60°F to +350°F
(-51°C to +177°C)

Maximum Operating Pressure Differential: Standard: 0 to 180 psi
Special: to 500 psi

Burst Pressure: 2000 psi

Leakage: Standard: Bubble-tight

Vacuum: Special: to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts A-C 50 to 60 cps
6 to 220 volts D-C

Nominal Power: 11 watts

Ambient Temp: Standard: Max. +25°C for continuous duty
Special: to +115°C

Coil Construction: Standard: Class "A" to +110°C
Special: to +220°C

Operate Time: 8 to 12 milliseconds

Coil Power: 11 watts

MECHANICAL CHARACTERISTICS:

Body: Brass.

Mounting: Standard: Bracket Housing.

Orifice Diameter: 3/64" to 3/16" (Inlet)

Porting: Standard: 1/4" NPTF

Housing: 1/2" NPS Conduit.

Weight: Approx. 2 lb. 8 ounces.

TYPE 401 4 WAY NC/NC SOLENOID VALVE "O" SERIES						
CATALOG NUMBER	PIPE SIZE	INLET ORIFICE	Cv	EXHAUST ORIFICE	Cv	MAX. OPER. PRES. DIFF. AC/DC
40111	1/4 in.	3/64 in.	.05	1/16 in.	.08	180
*40112	1/4 in.	1/16 in.	.10	1/16 in.	.08	125
40113	1/4 in.	1/16 in.	.10	3/32 in.	.16	100
40114	1/4 in.	3/32 in.	.18	3/32 in.	.16	90
40115	1/4 in.	1/8 in.	.28	3/32 in.	.16	60
40116	1/4 in.	5/32 in.	.35	3/32 in.	.16	40
40117	1/4 in.	3/16 in.	.50	3/32 in.	.16	25

DIMENSIONAL TOLERANCES ON FRACTIONS ± 1/64
*Indicates valves stocked locally by Allied distributor.



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.380 amps Holding 0.230 amps

Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 20" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
CP	Compensating Plunger
CT	Time Delay Coil
SV	Viton Seating Compound
RV	Viton O-Rings

ORDERING INSTRUCTIONS

1) Standard Valve:

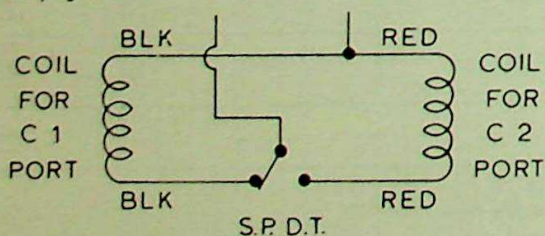
Specify: Catalog Number, Voltage and Frequency.

Example:

No. 40111 120-VAC 60-cycles
which designates a 4-way Normally-Closed/
Normally Closed valve with 3/64" x 1/16" Orifice,
1/4 in. NPTF Porting and Conduit Housing.

Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.



WIRING DIAGRAM

APPROXIMATE OPERATING TIME FOR AIR CYLINDERS

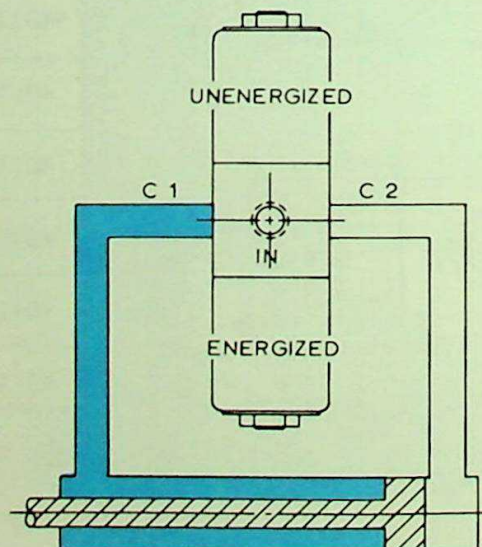
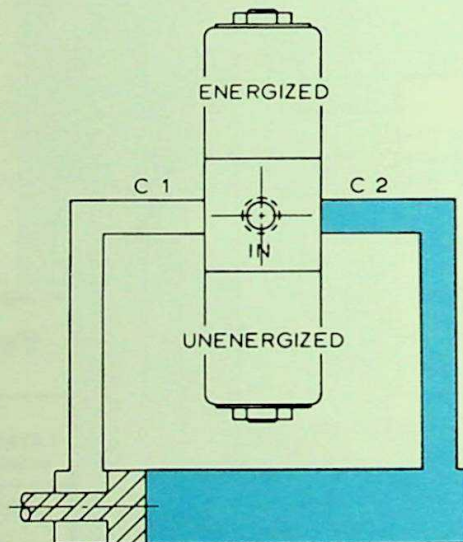
Piston displacement in seconds per inch with 1/16" orifice restriction.

Cylinder diameters in inches	6	1.180	.992	.963	.913	.906	.884
	5½	.994	.834	.807	.765	.760	.742
	5	.822	.690	.668	.633	.630	.613
	4½	.666	.557	.542	.514	.511	.497
	4	.526	.441	.427	.406	.401	.393
	3½	.402	.337	.327	.311	.308	.301
	3	.296	.247	.241	.229	.226	.220
	2½	.207	.173	.165	.159	.158	.154
	2	.131	.110	.107	.102	.1004	.0982
	1½	.074	.062	.0602	.0571	.0568	.0550
1	.0329	.0277	.0265	.0253	.0251	.0244	
	25	50	75	100	125	150	
Initial Pressure (PSIG)							

Initial Pressure (PSIG)

Correction Factor for other additional Orifices:

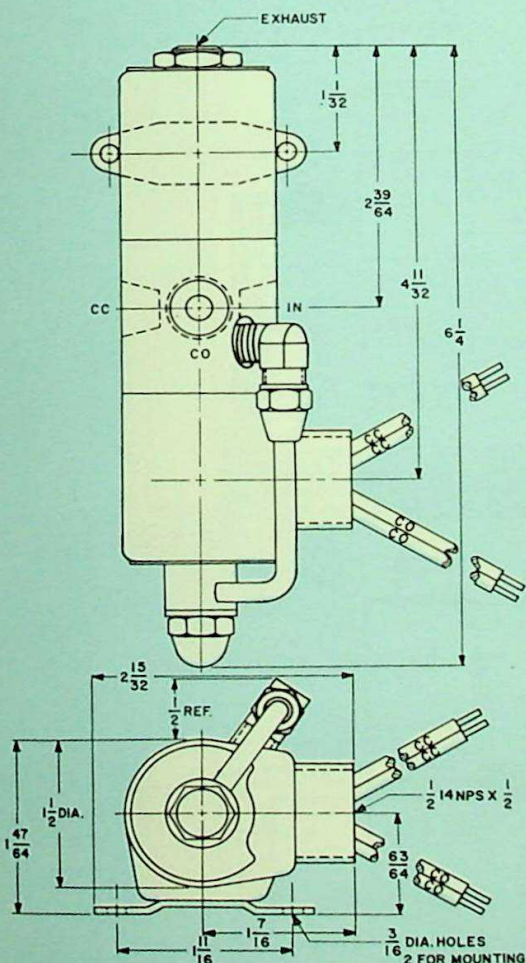
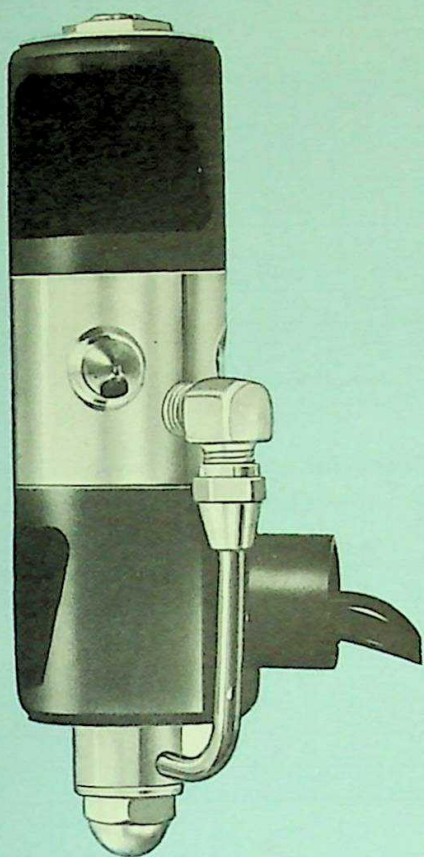
Orifice Size	Time Correction Factor for Orifices other than 1/16"
3/64"	1.8
1/16"	1
3/32"	.53
1/8"	.33
5/32"	.22
3/16"	.18
1/4"	.13



"O" SERIES

4 WAY NORMALLY CLOSED / NORMALLY OPEN SOLENOID VALVE

TYPE
403



GENERAL INFORMATION:

Features only four moving parts, is direct acting of packless construction and operates in any position. Valve operators must be energized simultaneously for desired sequencing of cylinder. May be used for (1) Double Acting Cylinder or (2) Single Acting Cylinders. Conduit Housing may be rotated 270°

OPERATING CONDITIONS:

Media: Pneumatic

Media Temp: Standard: -45°F to +185°F
(-43°C to +85°C)

Special: -60°F to +350°F
(-51°C to +177°C)

Maximum Operating Pressure Differential: Standard: 0 to 180 psi
Special: to 500 psi

Burst Pressure: 2000 psi

Leakage: Standard: Bubble-tight

Vacuum: Special: to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts A-C 50 to 60 cps
6 to 220 volts D-C

Nominal Power: 11 watts

Ambient Temp: Standard: Max. +25°C for continuous duty
Special: to +115°C

Coil Construction: Standard: Class "A" to +110°C
Special: to +220°C

Operate Time: 8 to 12 milliseconds

Coil Power: 11 watts

MECHANICAL CHARACTERISTICS:

Body: Brass.

Mounting: Standard: Bracket Housing.

Orifice Diameter: 3/64" to 3/16" (Normally Closed)

Porting: Standard: 1/4" NPTF

Housing: 1/2" NPS Conduit.

Weight: Approx. 2 lb. 8 ounces.

TYPE 403 4 WAY NORMALLY CLOSED / NORMALLY OPEN "O" SERIES SOLENOID VALVE

CATALOG NUMBER	PIPE SIZE	INLET ORIFICE		Cv		EXHAUST ORIFICE		Cv		MAX. OPER. PRES. DIFF. AC/DC
		CC	CO	CC	CO	CC	CO	CC	CO	
40311	1/4 in.	3/64 x 3/64		.05	.05	1/16 x 1/16		.09	.09	180
*40312	1/4 in.	1/16 x 1/16		.09	.09	1/16 x 1/16		.09	.09	125
40313	1/4 in.	1/16 x 1/16		.09	.16	3/32 x 3/32		.09	.16	100
40314	1/4 in.	3/32 x 3/32		.16	.16	3/32 x 3/32		.16	.16	90
40315	1/4 in.	1/8 x 3/32		.28	.16	3/32 x 1/8		.16	.28	60
40316	1/4 in.	5/32 x 3/32		.35	.16	3/32 x 5/32		.16	.35	40
40317	1/4 in.	3/16 x 3/32		.50	.16	3/32 x 3/16		.16	.50	25

DIMENSIONAL TOLERANCES ON FRACTIONS ± 1/64

*Indicates valves stocked locally by Allied distributor.



GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:

Inrush 0.290 amps Holding 0.210 amps

Inrush and Holding current of standard 110 volt d-c coil 0.076 amps

Leads:

All coils are supplied with 20" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
CP	Compensating Plunger
CT	Time Delay Coil
SV	Viton Seating Compound
RV	Viton O-Rings

ORDERING INSTRUCTIONS

1) Standard Valve:

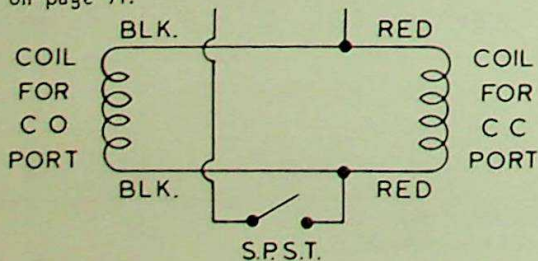
Specify: Catalog Number, Voltage and Frequency.

Example:

No. 40311 120-VAC 60-cycles
which designates a 4-way Normally-Closed/
Normally Open valve with 3/64" x 1/16" Orifice,
1/4 in. NPTF Porting and Conduit Housing.

Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.



WIRING DIAGRAM

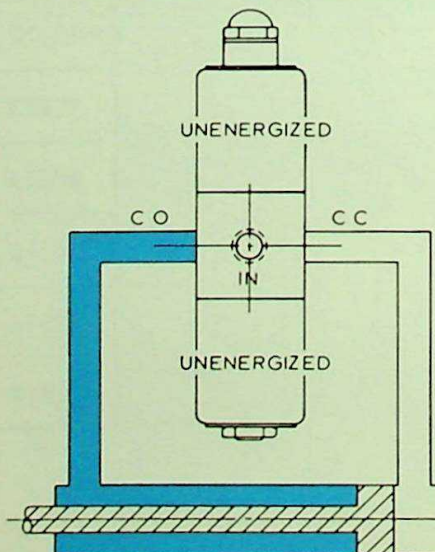
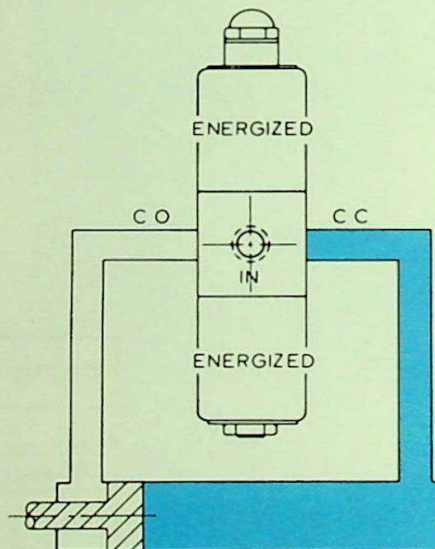
APPROXIMATE OPERATING TIME FOR AIR CYLINDERS

Piston displacement in seconds per inch with 1/16" orifice restriction.

Cylinder diameters in inches	6	1.180	.992	.963	.913	.906	.884
	5½	.994	.834	.807	.765	.760	.742
	5	.822	.690	.668	.633	.630	.613
	4½	.666	.557	.542	.514	.511	.497
	4	.526	.441	.427	.406	.401	.393
	3½	.402	.337	.327	.311	.308	.301
	3	.296	.247	.241	.229	.226	.220
	2½	.207	.173	.165	.159	.158	.154
	2	.131	.110	.107	.102	.1004	.0982
	1½	.074	.062	.0602	.0571	.0568	.0550
1	.0329	.0277	.0265	.0253	.0251	.0244	
	25	50	75	100	125	150	
Initial Pressure (PSIG)							

Correction Factor for other additional Orifices:

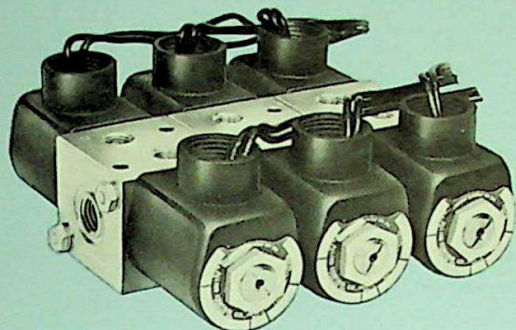
Orifice Size	Time Correction Factor for Orifices other than 1/16"
3/64"	1.8
1/16"	1
3/32"	.53
1/8"	.33
5/32"	.22
3/16"	.18
1/4"	.13



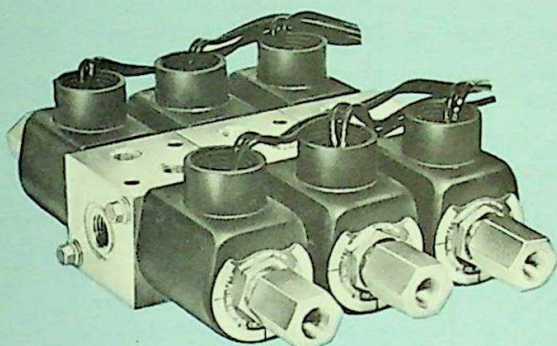
"O" SERIES

GANG-MOUNTED 4-WAY VALVES NORMALLY CLOSED / NORMALLY CLOSED

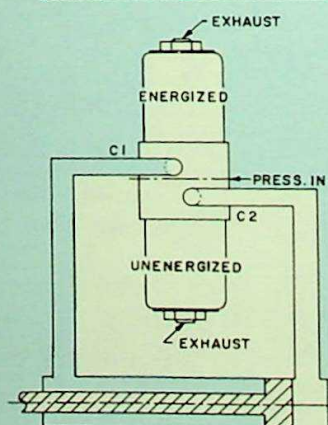
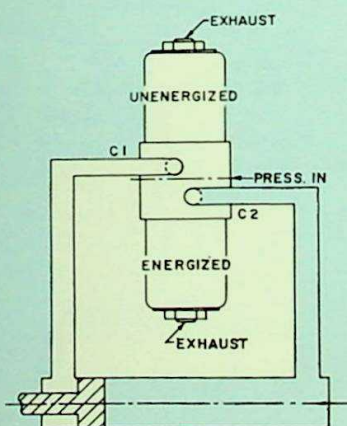
TYPES
404
&
405



TYPE 404
FREE VENTING



TYPE 405
LINE CONNECTING



GENERAL INFORMATION:

Features only four moving parts, is direct acting of packless construction and operates in any position. Valve operators must be energized alternately for desired sequencing of cylinder. Valve in neutral position when de-energized. May be used for (1) Double Acting Cylinder or (2) Single Acting Cylinders. Conduit Housing may be rotated 270°. Indicate number of valves to be ganged.

OPERATING CONDITIONS:

Media: Type 404 Pneumatic
Type 405 Pneumatic & Hydraulic

Media Temp: Standard: -45°F to +185°F
(-43°C to +85°C)
Special: -60°F to +350°F
(-51°C to +177°C)

Maximum Operating Pressure Differential: Standard: 0 to 180 psi
Special: to 500 psi

Burst Pressure: 2000 psi

Leakage: Standard: Bubble-tight

Vacuum: Special: to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts A-C 50 to 60 cps
6 to 220 volts D-C

Nominal Power: 11 watts

Ambient Temp: Standard: Max. +25°C for continuous duty
Special: to +115°C

Coil Construction: Standard: Class "A" to +110°C
Special: to +220°C

Operate Time: 8 to 12 milliseconds

Coil Power: 11 watts

MECHANICAL CHARACTERISTICS:

Body: Brass.

Mounting: Standard: Body

Orifice Diameter: 3/64" to 1/8" (Inlet)

Porting: Standard: 1/4" NPTF

Housing: 1/2" NPS Conduit.

Weight: Approx. 2 lb. 8 ounces.

Note: Can be furnished as gang mounted or as individual valves.

CATALOG NUMBER CONDUIT	CATALOG NUMBER GROMMET	PIPE SIZE INLET	PIPE SIZE OUTLET	INLET ORIFICE	Cv	EXHAUST ORIFICE	Cv	MAX. OPER. PRES. DIFF. AC/DC
40401	40481	1/4"	1/8"	3/64"	.05	1/16"	.08	180
40402	40482	1/4"	1/8"	1/16"	.10	1/16"	.08	125
40403	40483	1/4"	1/8"	1/16"	.10	3/32"	.16	100
40404	40484	1/4"	1/8"	3/32"	.18	3/32"	.16	90
40405	40485	1/4"	1/8"	1/8"	.28	3/32"	.16	60
40501	40581	1/4"	1/8"	3/64"	.05	1/16"	.08	180
40502	40582	1/4"	1/8"	1/16"	.10	1/16"	.08	125
40503	40583	1/4"	1/8"	1/16"	.10	3/32"	.16	100
40504	40584	1/4"	1/8"	3/32"	.18	3/32"	.16	90
40505	40585	1/4"	1/8"	1/8"	.28	3/32"	.16	60

DIMENSIONAL TOLERANCES ON FRACTIONS ± 1/64

GOULD ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H
Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Ampere	AC Volts	Ampere
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.380 amps Holding 0.230 amps
Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type valves are available:

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
CP	Compensating Plunger
CT	Time Delay Coil
SV	Viton Seating Compound
RV	Viton O-Rings

ORDERING INSTRUCTIONS

1) Standard Valve:

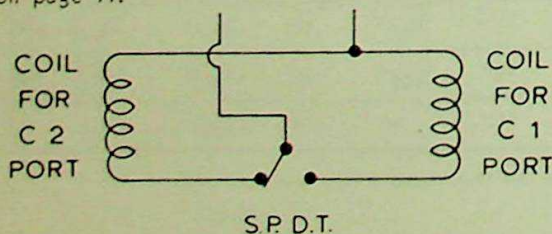
Specify: Catalog Number, Voltage and Frequency.

Example:

No. 40401 120-VAC 60-cycles
which designates a 4-way Normally-Closed/
Normally Closed valve with 3/64" x 1/16" Orifice,
1/4 in. NPTF Porting and Conduit Housing.

Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.



WIRING DIAGRAM

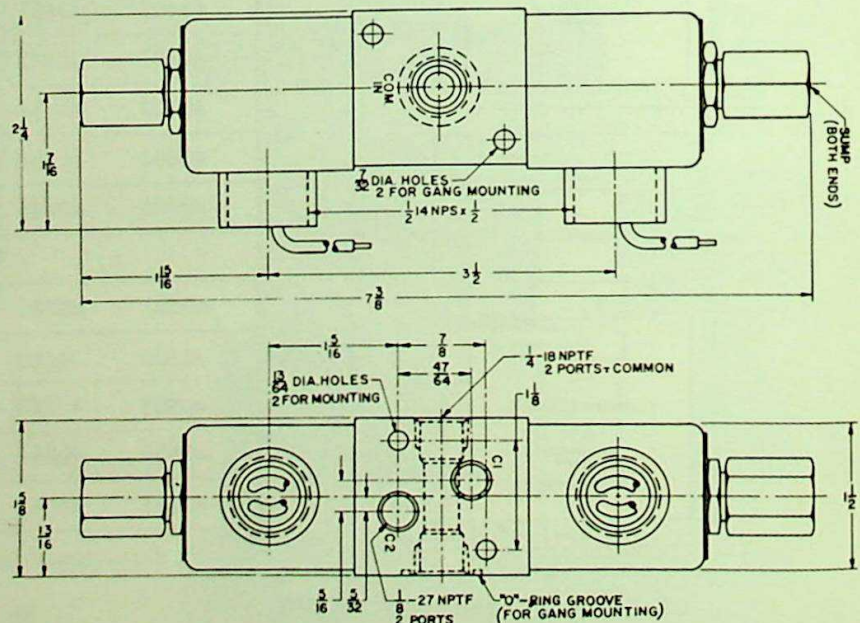
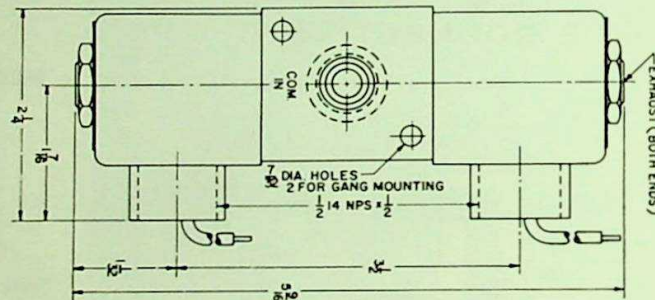
APPROXIMATE OPERATING TIME FOR AIR CYLINDERS

Piston displacement in seconds per inch with 1/16" orifice restriction.

Cylinder diameters in inches	6	1.180	.992	.963	.913	.906	.884
	5½	.994	.834	.807	.765	.760	.742
	5	.822	.690	.668	.633	.630	.613
	4½	.666	.557	.542	.514	.511	.497
	4	.526	.441	.427	.406	.401	.393
	3½	.402	.337	.327	.311	.308	.301
	3	.296	.247	.241	.229	.226	.220
	2½	.207	.173	.165	.159	.158	.154
	2	.131	.110	.107	.102	.1004	.0982
	1½	.074	.062	.0602	.0571	.0568	.0550
1	.0329	.0277	.0265	.0253	.0251	.0244	
		25	50	75	100	125	150
Initial Pressure (PSIG)							

Correction Factor for other additional Orifices:

Orifice Size	Time Correction Factor for Orifices other than 1/16"
3/64"	1.8
1/16"	1
3/32"	.53
1/8"	.33
5/32"	.22
3/16"	.18
1/4"	.13

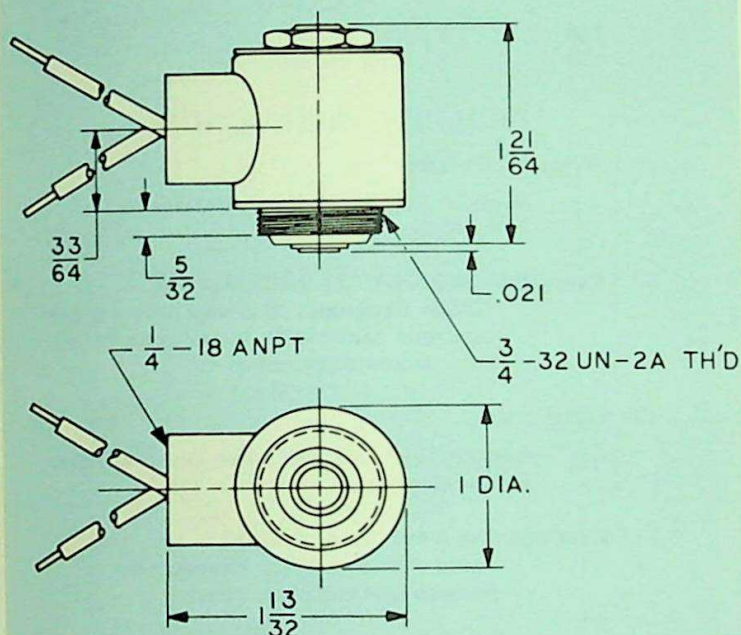


"1" SERIES

OPERATORS -- 2-WAY NC or 3-WAY FREE VENTING

TYPE
230
330

ACTUAL SIZE



GENERAL INFORMATION

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 800

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 and 430F stainless steel

Orifice Diameter: 1/32 in. to 1/8 in.

Porting: 1/8 in. NPTF (3-way exh.)

Housing: 1/4 in. ANPT Conduit or Grommet

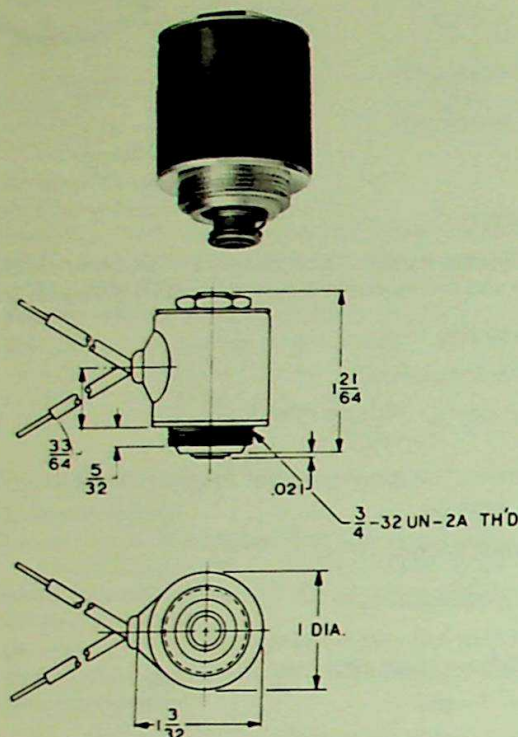
Weight: 3.5 ounces maximum

PILOT SYSTEM SPECIFICATION					OPERATING CHARACTERISTICS						
MAXIMUM WORKING PRESSURE-PSI					RECOMMENDED PLUNGER LIFT	SOLENOID OPERATOR					
TYPE 230 NORMALLY CLOSED		TYPE 330 FREE VENTING		MAXIMUM ORIFICE DIAMETER		TYPE 330 ONLY		CATALOG NUMBERS			
AC	DC	AC	DC	INCHES	INCHES	MAXIMUM ORIFICE DIAMETER	AVERAGE CV FACTOR	TYPE 230 NORMALLY CLOSED		TYPE 330 FREE VENTING	
								CONDUIT	GROMMET	CONDUIT	GROMMET
800	800	200	200	1/32	.0225	1/32	.019	23000	23080	33001	33081
400	400	150	150	3/64	.0265	3/64	.046	23000	23080	33002	33082
300	125	100	100	1/16	.0305	3/64	.046	23000	23080	33002	33082
150	45	50	50	3/32	.0385	3/64	.046	23000	23080	33002	33082
50	15	20	20	1/8	.0355	3/64	.046	23001	23081	33004	33084
			75	1/16	.0305	1/16	.080			33003	33083

 **GOULD ALLIED CONTROL**

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE 230 & 330
2-WAY NORMALLY-CLOSED
OR
3-WAY FREE VENTING
GROMMET HOUSING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" — (Standard)	110°C	25°C
Class "B" — (Epoxy Resin)	120°C	35°C
Class "H" — (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H
Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "1" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.215 amps Holding 0.100 amps
Inrush and Holding current of standard 120 volts d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type operators are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
COIL	
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" Molded
PF	Stop Adapter
HOUSING	
HA	1/2" Conduit
HB	Strap Housing

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 33081 120-VAC 60-cycles
which designates a 3-way free venting operator with 1/32 in. exhaust Orifice and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-HB 33081 120/60
Same as example No. 1 except:
Molded coil and strap housing.

* Can only be supplied with an open strap housing or a special slotted housing.

For Application Assistance, Please Use Questionnaire on page 91.

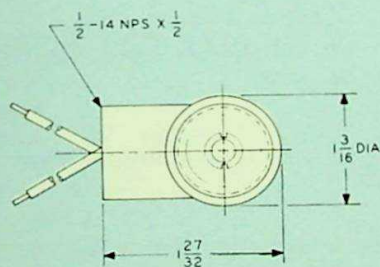
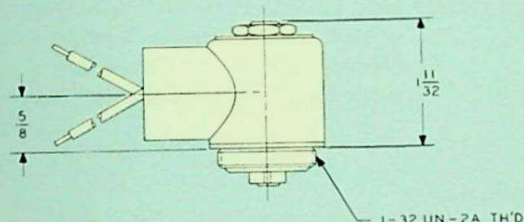
"8" SERIES

OPERATORS—2-WAY NORMALLY CLOSED

TYPE
280



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic
Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
 $(-43^{\circ}\text{C}$ to $+85^{\circ}\text{C})$
Maximum Operating Pressure Differential:
Standard; 0 to 400
Burst Pressure: 6000psi
Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request
Nominal Power: 7.5 watts (nom.)
Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 and 430F stainless steel
Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{8}$ in.
Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Weight: 5.0 ounces maximum

OPERATING CHARACTERISTICS					
PILOT SYSTEM SPECIFICATION (BODY)				SOLENOID OPERATOR	
TYPE 280 NORMALLY CLOSED	MAXIMUM WORKING PRESSURE-PSI	MAXIMUM ORIFICE DIAMETER	RECOMMENDED PLUNGER LIFT	CATALOG NUMBERS TYPE 280 NORMALLY CLOSED	
AC	DC	INCHES	INCHES	CONDUIT	GROMMET
400	400	$\frac{3}{64}$	.025	28000	28080
350	250	$\frac{1}{16}$	.025	28000	28080
175	100	$\frac{3}{32}$	.030	28000	28080
150	80	$\frac{7}{64}$	.030	28000	28080
90	50	$\frac{1}{8}$	.035	28000	28080

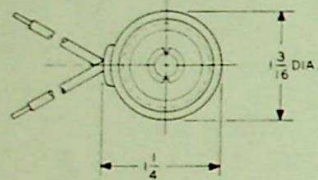
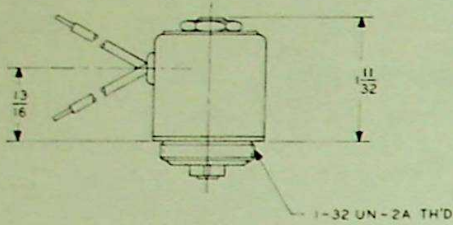


GOULD

ALLIED CONTROL

Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type operators are available:

For details refer to the optional variation sheet page 85.

PREFIX DESCRIPTION COIL

*1	Class B Molded Coil (Not initially available)
2	Class H Vacuum Impregnated Coil

HOUSING

HB	Strap Housing (Not initially available)
----	--

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 28080 120-VAC 60-cycles which designates a 2-Way Normally Closed operator with Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-HB 28080 120/60 Same as example No. 1 except: Molded coil and strap housing.

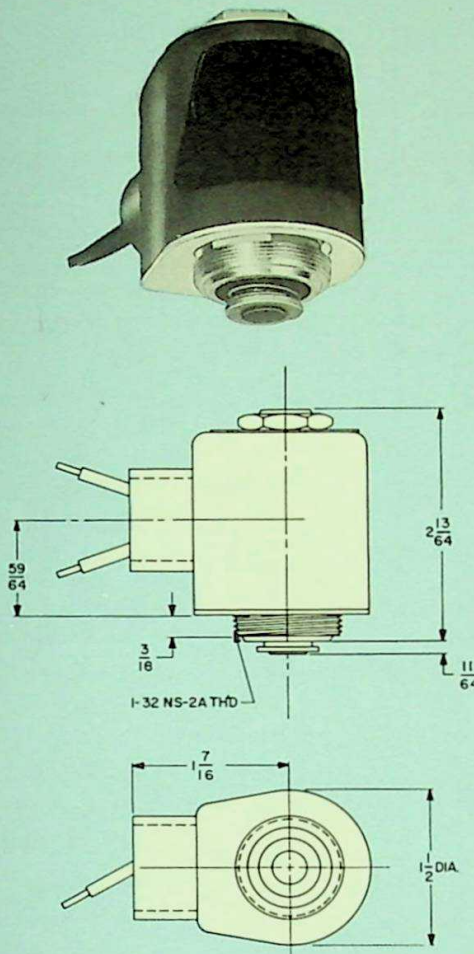
* Can only be supplied with an open strap housing.

For Application Assistance,
Please Use Questionnaire, page 91.

"O" SERIES

OPERATORS — 2 WAY NC OR 3 WAY FREE VENTING

TYPES
220
320



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position, for normally closed 2-way and free-venting applications.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic-Type 320 Pneumatic only

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 400
Special; to 1000

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight (for orifices conforming to Allied specifications)

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 and 430 F stainless steel

Orifice Diameter: $\frac{3}{64}$ in. to $\frac{1}{2}$ in. (3-way free-venting only)

Housing: $\frac{1}{2}$ " NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

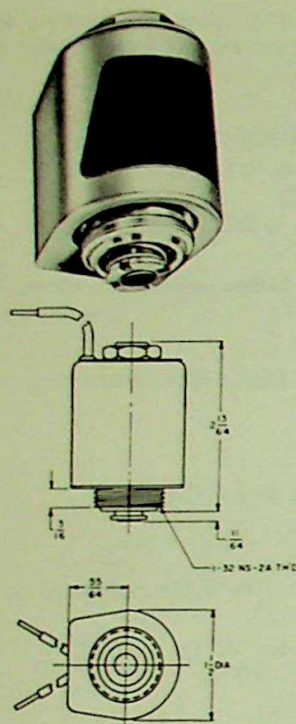
Weight: 12 ounces

PILOT SYSTEM SPECIFICATION				OPERATING CHARACTERISTICS "O" SERIES					SOLENOID OPERATOR			
MAXIMUM OPERATING PRESSURE DIFFERENTIAL		TYPE 320 FREE VENTING	MAXIMUM ORIFICE DIAMETER	RECOMMENDED PLUNGER LIFT INCHES	TYPE 320 ONLY		AVERAGE Cv FACTOR	CATALOG NUMBERS	TYPE 220 NORMALLY CLOSED		TYPE 320 FREE VENTING	
TYPE 220 NORMALLY CLOSED	TYPE 320 FREE VENTING				MAXIMUM ORIFICE DIAMETER	INCHES			CONDUIT	GROMMET	CONDUIT	GROMMET
AC	DC	AC	DC	INCHES	AC	DC	INCHES					
400	400	175	175	$\frac{3}{64}$	.035	.025	$\frac{1}{16}$	0.08	22000	22080	32002	32082
275	275	125	125	$\frac{1}{16}$	.035	.025	$\frac{1}{16}$	0.08	22000	22080	32002	32082
175	140	90	90	$\frac{3}{32}$	.0425	.0325	$\frac{3}{32}$	0.12	22000	22080	32003	32083
135	80	60	60	$\frac{1}{8}$	.050	.040	$\frac{3}{32}$	0.12	22000	22080	32003	32083
90	45	40	40	$\frac{3}{32}$	.0575	.0475	$\frac{3}{32}$	0.12	22000	22080	32003	32083
75	20	25	25	$\frac{3}{16}$	.065	.055	$\frac{3}{32}$	0.12	22000	22080	32003	32083
40	10	VACUUM		$\frac{1}{4}$	.080	.070	$\frac{3}{32}$	0.12	22001	22081	32003	32083
—	—	90	90	$\frac{3}{32}$	.0425	.0325	$\frac{3}{64}$	0.05	22000	22080	32001	32081

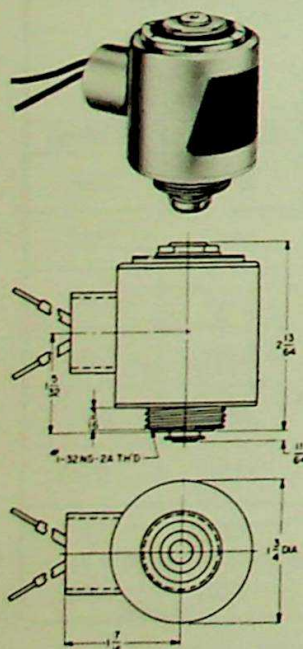
DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$

 **GOULD ALLIED CONTROL**
Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE 220 & 320
2-WAY NORMALLY-CLOSED
OR
3-WAY FREE-VENTING
GROMMET HOUSING



TYPE HH-220 & HH-320
2-WAY NORMALLY-CLOSED
OR
3-WAY FREE-VENTING
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 220 & 320 operators.

COIL DATA

Type	Continuous Duty:	Max. Total	Max.
		Coil Temp.	Ambient Temp.
Class "A"— (Standard)		110°C	25°C
Class "B"— (Epoxy Resin)		120°C	35°C
Class "C"— (Isomica)		220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)		180°C	

Intermittent Duty

Available in Class A, B, C & H
 Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
 Inrush 0.380 amps Holding 0.230 amps
 Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-220 & CR-320
NOISELESS AC OPERATION
RECTIFIED COIL OPERATORS

Characteristics: Same as std. types 220 & 320 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance: (For Type CR-220 only)

Orifice Size	Plunger Lift	Max.
	Inches	Pressure PSI
3/64	.035	300
1/16	.035	200
3/32	.0425	150
1/8	.0500	125
9/32	.0575	100
3/16	.065	65
1/4	.080	10

Performance for type CR-320 is identical to AC ratings for standard type 320 operator as shown on the chart on the front of this sheet.

OPTIONAL VARIATIONS

The following variations from Standard type operators are available;

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
	COIL
1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	JIC Housing
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
CP	Compensating Plunger (3-Way)

**USE PREFIX WHEN ORDERING
 AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 22080 120-VAC 60-cycles which designates a 2-way Normally-Closed operator with Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1HS-22080 120/60 Same as example No. 1 except: Molded Coil, Mounting Bracket.

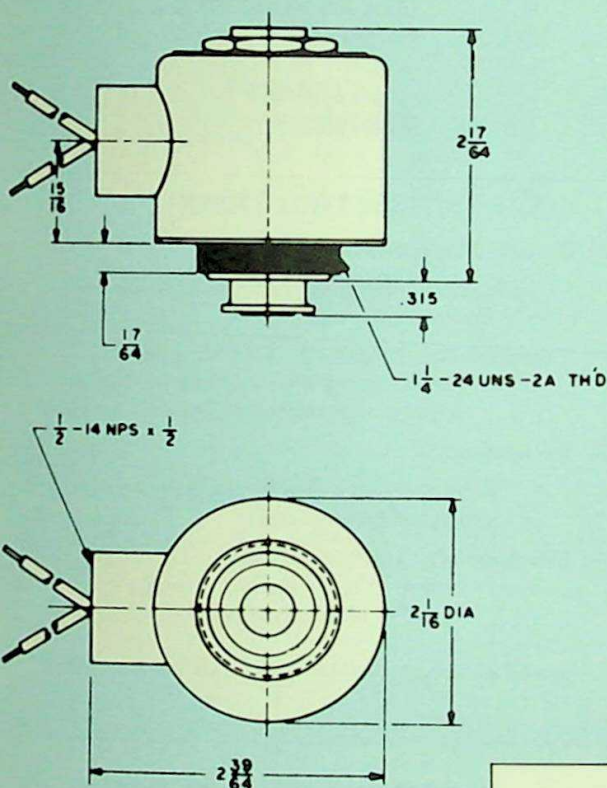
Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"2" SERIES

OPERATORS -- 2-WAY NORMALLY CLOSED

TYPE
260



GENERAL INFORMATION

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removed from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard -45°F to +185°F
(-43°C to +85°C)
Special -60°F to +350°F
(-51°C to +177°C)

Maximum Operating Pressure Differential: Standard: Vacuum to 750 psi
Special to 1000 psi

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
6 to 230 volts d-c

Ambient Temp: Standard; Max. +25°C For continuous duty
Special; To +200°C

Coil Construction: Standard; Class "A" to +110°C
Special; to +220°C

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 + 430F stainless steel

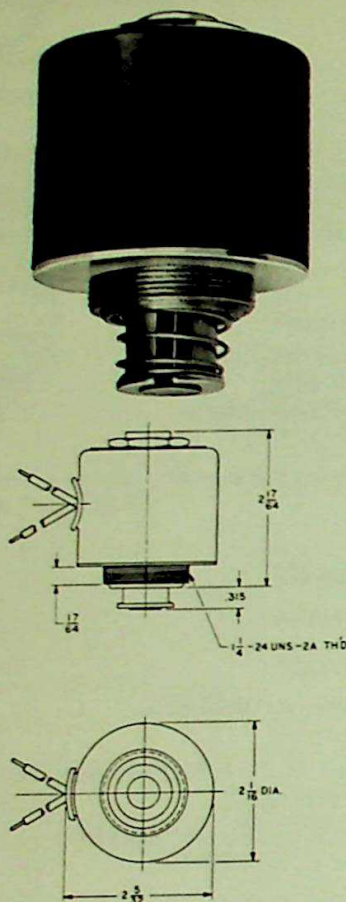
Housing: 1/2 in. NPS Conduit or Grommet

Weight: 1 lb. 4 oz. max.

OPERATING CHARACTERISTICS					
PILOT SYSTEM SPECIFICATION				SOLENOID OPERATOR	
M.O.P.D.	MAXIMUM ORIFICE	RECOMMENDED PLUNGER LIFT INCHES	Cv FACTOR	CATALOG NUMBERS	
AC & DC	INCHES	AC & DC		CONDUIT	GROMMET
750	1/16	.026	.12	26000	26080
500	3/32	.038	.21	26000	26080
300	1/8	.045	.32	26000	26080
225	5/32	.052	.50	26001	26081
140	3/16	.060	.69	26001	26081
100	1/4	.076	.94	26001	26081
45	5/16	.092	1.48	26001	26081
35	3/8	.107	1.90	26001	26081

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TYPE 260
2-WAY NORMALLY-CLOSED
GROMMET HOUSING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B & H
 Maximum "on" and minimum "bff" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" Coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps

Inrush and Holding current of standard 110 volt d-c coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type operators are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil

HOUSING

HR	Strain Relief
----	---------------

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 26000 120-VAC 60-cycles which designates a 2-way normally closed operator with Conduit Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1-26000 120/60
 Same as example No. 1 except:
 Class B Waterproof Coil

Specify vacuum if valves are to be used on VAC.

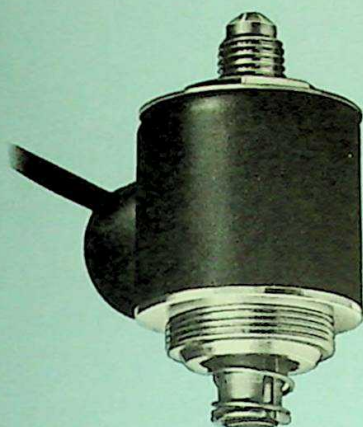
For Application Assistance, Please Use Questionnaire on page 91.

"1" SERIES

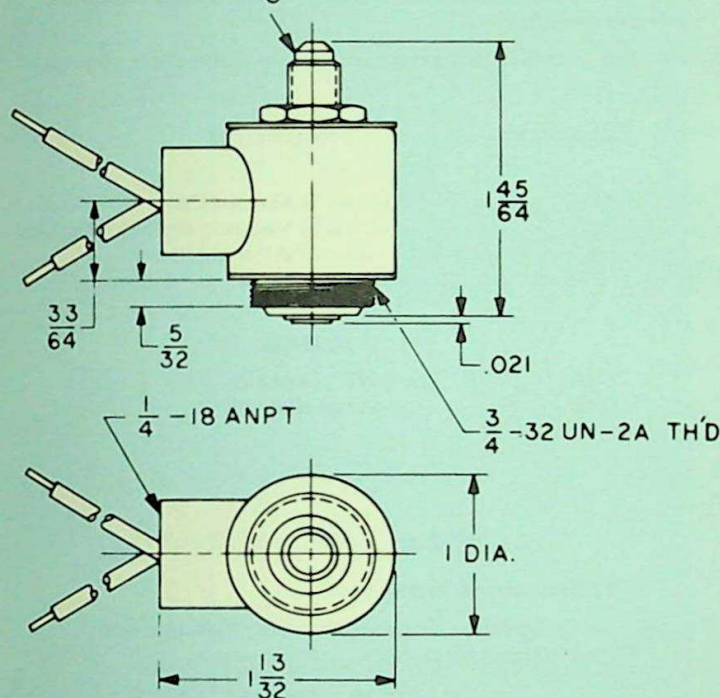
OPERATORS -- 3-WAY NC or NO-LINE CONNECTING

TYPE
331
332

ACTUAL SIZE



SAE 45° x 1/8" FLARE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to +185°F
(-43°C to +85°C)

Maximum Operating Pressure Differential: Standard; 0 to 200

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7 watts

Ambient Temp: Standard; Max. +25°C for continuous duty

Coil Construction: Standard; Class "A" to +110°C

Operate Time: 6 to 10 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 and 430 F stainless steel

Orifice Diameter: 1/32 in. to 1/16 in. (end stop)

Porting: 1/8 in. NPTF (exh.)

Housing: 1/4 in. ANPT Conduit or Grommet

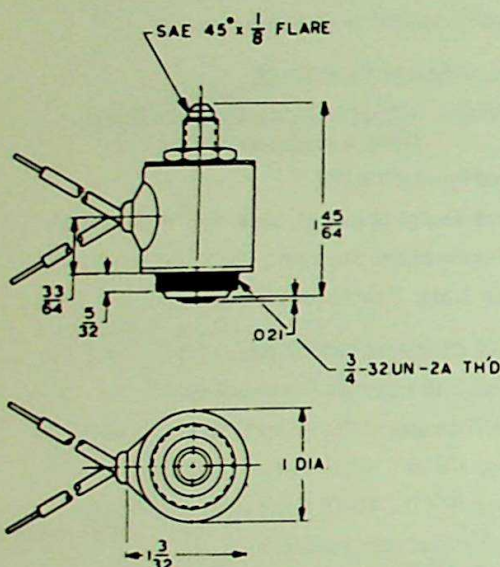
Weight: 4.0 ounces maximum

PILOT SYSTEM SPECIFICATION								OPERATING CHARACTERISTICS								SOLENOID OPERATOR			
MAXIMUM WORKING PRESSURES-PSI				MAXIMUM ORIFICE DIAMETER		RECOMMENDED PLUNGER LIFT		MAXIMUM ORIFICE DIAMETER		AVERAGE Cv FACTOR		45° FLARE FITTING TUBE SIZE	CATALOG NUMBERS						
TYPE 331 NORMALLY CLOSED		TYPE 332 NORMALLY OPEN		331	332	331	332	331	332	331	332		TYPE 331 NORMALLY CLOSED		TYPE 332 NORMALLY OPEN				
AC	DC	AC	DC	INCHES		INCHES		INCHES				INCHES	COND	GROM	COND	GROM			
200	200	150	150	1/32	1/32	.0225	.0225	1/32	1/32	.019	.019	1/8	33101	33181	33201	33281			
150	150	100	100	3/64	3/64	.0265	.0265	3/64	3/64	.046	.046	1/8	33102	33182	33202	33282			
100	100	75	75	1/16	3/64	.0305	.0305	3/64	3/64	.046	.046	1/8	33102	33182	33202	33282			
	75		75	1/16	1/16	.0305	.0305	1/16	1/16	.080	.080	1/8	33103	33183	33203	33283			
50	50	50	50	3/32	3/32	.0385	.0385	3/64	3/64	.046	.046	1/8	33102	33182	33202	33282			
20	20	25	15	1/8	1/8	.0355	.0355	3/64	3/64	.080	.080	1/8	33104	33184	33204	33284			

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TYPE 331 & 332
3-WAY NORMALLY-CLOSED
OR
3-WAY NORMALLY-OPEN
GROMMET HOUSING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H
Maximum "on" and minimum "off" time, maximum
media and ambient temperatures must be specified
when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils) "1" series

AC Volts	Amperes	AC Volts	Amperes
6	2.000	120	0.100
12	1.000	240	0.050
24	0.500		
48	0.250		

Nominal Power: 7 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
Inrush 0.215 amps Holding 0.100 amps
Inrush and Holding current of standard 120 volt
d-c coil 0.063 amps

Leads:

All coils are supplied with 24" stripped leads unless
otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type operators
are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
	COIL
*1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
6	Spade "A" molded
PF	Stop Adapter
	HOUSING
HA	1/2" Conduit
HB	Strap Housing

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and
Frequency.

Example: No. 33281 120-VAC 60-cycles
which designates a 3-way Normally-
Open operator with 1/32 in. exhaust
Orifice and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves
with variations.

Example: No. 1HB-33281 120/60
Same as example No. 1 except:
Molded Coil and Strap Housing

* Can only be supplied with an open strap
housing or a special slotted housing.

For Application Assistance, Please Use Questionnaire
on page 91.

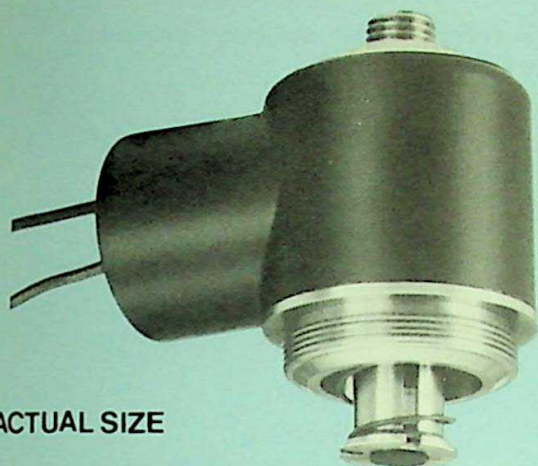
"8" SERIES

OPERATORS—3-WAY NC or NO-LINE CONNECTING

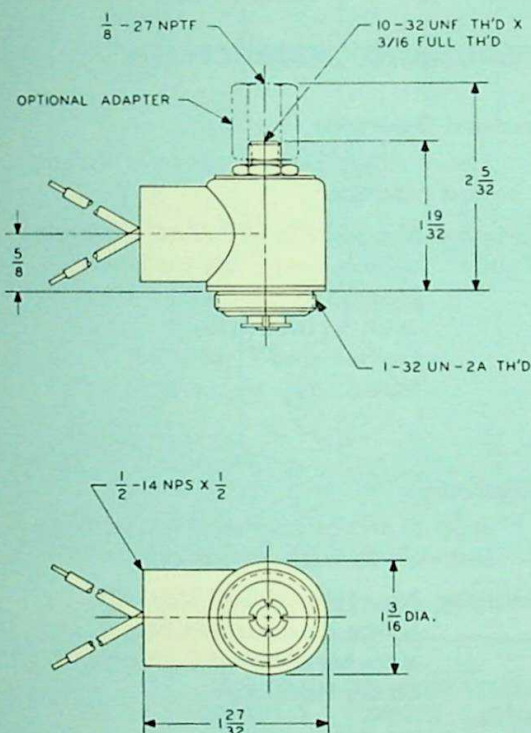
TYPE

381

382



ACTUAL SIZE



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)

Maximum Operating Pressure Differential:
Standard; 0 to 175

Burst Pressure: 6000psi

Leakage: Standard; bubble tight

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 120 or 240 volts a-c 50 to 60 cps
Other voltages on request

Nominal Power: 7.5 watts (nom.)

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$

Operate Time: 10-15 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 and 430F Stainless Steel

Orifice Diameter: $\frac{3}{64}$ in. or $\frac{1}{16}$ in. (endstop)

Porting: #10-32 UNF Female Thd. Std. (or optional stop adapter with $\frac{1}{8}$ " NPTF Thd.)

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet

Weight: 5.0 ounces maximum

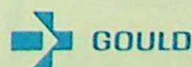
Compensating Plunger with Viton top seal: Standard

OPERATING CHARACTERISTICS

PILOT SYSTEM SPECIFICATIONS (BODY)

SOLENOID OPERATOR

MAXIMUM WORKING PRESSURES-PSI										CATALOG NUMBERS					
TYPE 381 NORMALLY CLOSED		TYPE 382 NORMALLY OPEN		MAXIMUM ORIFICE DIAMETER		RECOMMENDED PLUNGER LIFT		MAXIMUM ORIFICE DIAMETER		AVERAGE Cv FACTOR		TYPE 381 NORMALLY CLOSED		TYPE 382 NORMALLY OPEN	
		381	382	381	382	381	382	381	382	381	382				
AC & DC	AC & DC	INCHES		INCHES		INCHES				CONDUIT	GROMMET	CONDUIT	GROMMET		
175	150	$\frac{3}{64}$	$\frac{3}{64}$	.025	.025	$\frac{3}{64}$	$\frac{3}{64}$	.05	.05	38100	38180	38200	38280		
125	115	$\frac{1}{16}$	$\frac{1}{16}$	.030	.030	$\frac{1}{16}$	$\frac{1}{16}$	.09	.09	38101	38181	38201	38281		
75	100	$\frac{3}{32}$	$\frac{3}{32}$	.030	.030	$\frac{1}{16}$	$\frac{1}{16}$	.09	.09	38101	38181	38201	38281		
50	75	$\frac{1}{8}$	$\frac{1}{8}$	.035	.035	$\frac{1}{16}$	$\frac{1}{16}$	.09	.09	38101	38181	38201	38281		



GOULD

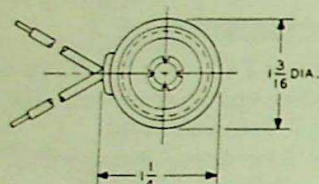
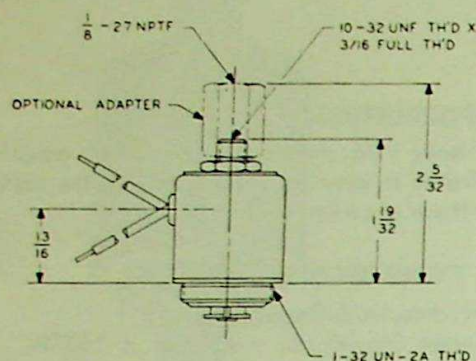
ALLIED CONTROL

Gould Inc., Allied Control Division

100 Relay Road, Plantsville, Connecticut 06479

Telephone (203) 628-9654

GROMMET HOUSING OUTLINE DRAWING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "H"— (Vacuum Impregnated)	180°C	Dependent upon Application

Intermittent Duty

Available in Class A, B & H

Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Average Ampere Ratings: (For Std. Class "A" Coils)

A.C. VOLTS	INRUSH	HOLDING
6/60	3.0	1.8
12/60	1.5	.95
24/60	.75	.50
48/60	.375	.25
120/60	.15	.10
240/60	.075	.05

Nominal Power: 7.5 watts continuous duty

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

OPTIONAL VARIATIONS

The following variations from Standard type operators are available:

For details refer to the optional variation sheet page 85.

PREFIX	DESCRIPTION
	COIL
*1	Class B Molded Coil (Not initially available)
2	Class H Vacuum Impregnated Coil

HOUSING

HB	Strap Housing (Not initially available)
----	--

ORDERING INSTRUCTIONS

1) Standard Operator

Specify: Catalog Number, Voltage and Frequency.

Example: No. 38280 120-VAC 60-cycles which designates a 3-way Normally-Open operator with 3/4 in. exhaust Orifice and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1HB-38280 120/60 Same as example No. 1 except: Molded Coil and Strap Housing

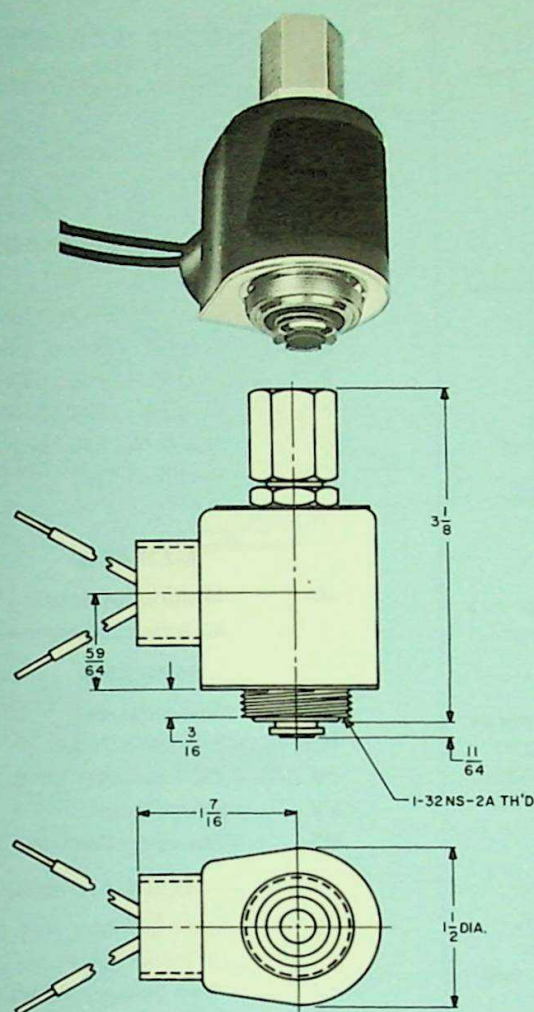
* Can only be supplied with an open strap housing.

For Application Assistance,
Please Use Questionnaire, page 91.

"O" SERIES

OPERATORS — 3 WAY NC OR NO — LINE CONNECTING

321
322



GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and is available normally open or normally closed.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp: Standard; -45°F to $+185^{\circ}\text{F}$
(-43°C to $+85^{\circ}\text{C}$)
Special; -60°F to $+350^{\circ}\text{F}$
(-51°C to $+177^{\circ}\text{C}$)

Maximum Operating Pressure Differential: Standard; 0 to 175
Special; to 500

Burst Pressure: 6000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 1 micron

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 440 volts a-c 50 to 60 cps
6 to 220 volts d-c

Nominal Power: 11 watts

Ambient Temp: Standard; Max. $+25^{\circ}\text{C}$ for continuous duty
Special; to $+115^{\circ}\text{C}$

Coil Construction: Standard; Class "A" to $+110^{\circ}\text{C}$
Special; to $+220^{\circ}\text{C}$

Operate Time: 8 to 12 milliseconds

MECHANICAL CHARACTERISTICS:

Material: Stainless Steel

Orifice Diameter: $\frac{3}{16}$ in. to $\frac{3}{32}$ in. (end stop)

Porting: $\frac{1}{8}$ in. NPTF & $\frac{1}{4}$ in. NPTF

Housing: $\frac{1}{2}$ in. NPS Conduit or Grommet
Explosion Proof; NEMA VII, IX, IXA

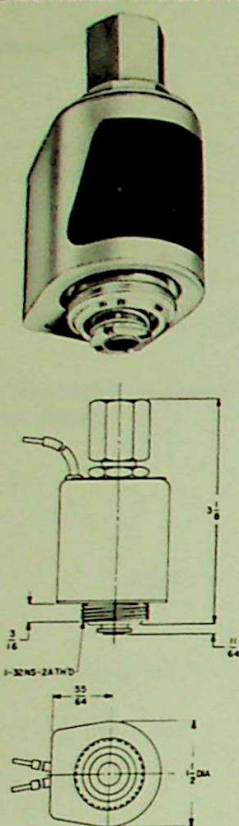
Weight: 13 ounces

PILOT SYSTEM SPECIFICATION				OPERATING CHARACTERISTICS "O" SERIES					SOLENOID OPERATOR				
MAXIMUM OPERATING PRESSURE DIFFERENTIAL				MAXIMUM ORIFICE DIAMETER INCHES	RECOMMENDED PLUNGER LIFT INCHES		MAXIMUM ORIFICE DIAMETER INCHES	AVERAGE Cv FACTOR	PORTING PIPE SIZE	CATALOG NUMBERS			
TYPE 321 NORMALLY CLOSED	TYPE 322 NORMALLY OPEN	TYPE 321 NORMALLY CLOSED	TYPE 322 NORMALLY OPEN							TYPE 321 NORMALLY CLOSED	TYPE 322 NORMALLY OPEN	TYPE 321 NORMALLY CLOSED	TYPE 322 NORMALLY OPEN
AC	DC	AC	DC		AC	DC			NPT	CONDUIT	GROMMET	CONDUIT	GROMMET
175	175	150	150	$\frac{3}{16}$	.035	.025	$\frac{1}{16}$	0.08	$\frac{1}{8}$ $\frac{1}{4}$	32102 32112	32182 32192	32202 32212	32282 32292
125	125	125	125	$\frac{1}{16}$	.035	.025	$\frac{1}{16}$	0.08	$\frac{1}{8}$ $\frac{1}{4}$	32102 32112	32182 32192	32202 32212	32282 32292
90	90	75	50	$\frac{3}{32}$	.0425	.0325	$\frac{3}{32}$	0.12	$\frac{1}{8}$ $\frac{1}{4}$	32103 32113	32183 32193	32203 32213	32283 32293
60	60	65	40	$\frac{1}{8}$	.050	.040	$\frac{3}{32}$	0.12	$\frac{1}{8}$ $\frac{1}{4}$	32103 32113	32183 32193	32203 32213	32283 32293
40	40	50	20	$\frac{3}{32}$	.0575	.0475	$\frac{3}{32}$	0.12	$\frac{1}{8}$ $\frac{1}{4}$	32103 32113	32183 32193	32203 32213	32283 32293
25	25	30	10	$\frac{3}{16}$	.065	.055	$\frac{3}{32}$	0.12	$\frac{1}{8}$ $\frac{1}{4}$	32103 32113	32183 32193	32203 32213	32283 32293
VACUUM		25	0	$\frac{1}{4}$	.080	.070	$\frac{3}{32}$	0.12	$\frac{1}{8}$ $\frac{1}{4}$	32103 32113	32183 32193	32203 32213	32283 32293
90	90	125	100	$\frac{3}{32}$	.0425	.0325	$\frac{3}{16}$	0.05	$\frac{1}{8}$ $\frac{1}{4}$	32101 32111	32181 32191	32201 32211	32281 32291

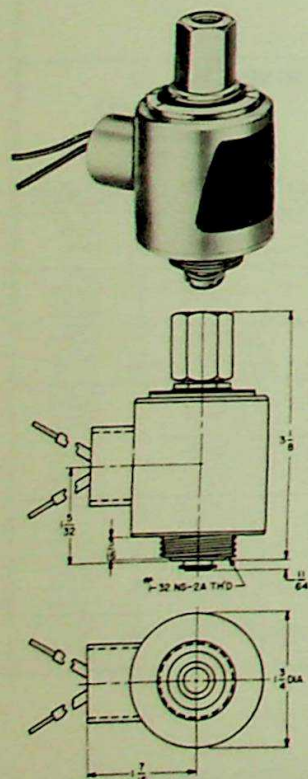
DIMENSIONAL TOLERANCES ON FRACTIONS $\pm \frac{1}{64}$

GOULD ALLIED CONTROL
Gould Inc., Allied Control Division
100 Relay Road, Plantsville, Connecticut 06479
Telephone (203) 628-9654

TYPE 321 & 322
3-WAY NORMALLY-CLOSED
OR
3-WAY NORMALLY-OPEN
GROMMET HOUSING



TYPE HH-321 & HH-322
3-WAY NORMALLY-CLOSED
OR
3-WAY NORMALLY-OPEN
EXPLOSION PROOF HOUSING
UL & CSA APPROVED



Characteristics: Same as standard type 321 & 322 operators.

COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A"— (Standard)	110°C	25°C
Class "B"— (Epoxy Resin)	120°C	35°C
Class "C"— (Isomica)	220°C	Dependent upon Application
Class "H"— (Vacuum Impregnated)	180°C	

Intermittent Duty

Available in Class A, B, C & H
 Maximum "on" and minimum "off" time, maximum media and ambient temperatures must be specified when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	3.900	120	0.230
12	1.800	240	0.105
24	1.100	460	0.065
48	0.340		

Nominal Power: 11 watts continuous duty

Current Drain:

Current Drain of standard 120 volt 60 cps coil:
 Inrush 0.380 amps Holding 0.230 amps
 Inrush and Holding current of standard 110 volt d-c coil 0.120 amps

Leads:

All coils are supplied with 24" stripped leads unless otherwise specified

TYPE CR-321 & CR-322

NOISELESS AC OPERATION

3-WAY RECTIFIED COIL OPERATOR

Characteristics: Same as std. type 321 & 322 except:

Ambient Temp: Max. +45°C for cont. duty

Coil Voltage: 120 and 240 volts 60 cps

Nominal Power: 11 watts

PIV: 600 volts standard (higher available)

Performance:

Type CR-321 and CR-322 are identical to AC ratings for standard type 321 & 322 operators as shown on the chart on the front of this sheet.

OPTIONAL VARIATIONS

The following variations from Standard type operators are available;

For details refer to the optional variation sheet page 85.

PREFIX

DESCRIPTION

COIL

1	Class B Molded Coil
2	Class H Vacuum Impregnated Coil
3	Class C Isomica Coil
4	Class A 120-240/60 Coil
6	Spade "A" Molded
CR	Rectified Coil

METERING

MA	Metering Adapter
MV	Metering Adapter—Free Venting

HOUSING

HB	Strap Housing
HH	Explosion Proof
HJ	JIC Housing
HR	Strain Relief
HS	Mounting Bracket

MISCELLANEOUS

RV	Viton O-Rings
RT	Teflon O-Rings
SV	Viton Seating Compound
ST	Teflon Seating Compound
CP	Compensating Plunger

**USE PREFIX WHEN ORDERING
 AND LIST IN CONSECUTIVE ORDER**

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and Frequency.

Example: No. 32182 120-VAC 60-cycles which designates a 3-way Normally-Closed operator with 1/16 in. Orifice, and Grommet Housing.

2) Variations:

Add prefixes as listed when ordering valves with variations.

Example: No. 1HS-32182 120/60 Same as example No. 1 except: Molded Coil, Mounting Bracket.

Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire on page 91.

"2" SERIES

OPERATORS -- 3-WAY NC or NO-LINE CONNECTING

TYPE
360
361

GENERAL INFORMATION:

Features only two moving parts, is of packless construction, operates in any position and can be serviced without removal from pipe line.

OPERATING CONDITIONS:

Media: Hydraulic & Pneumatic

Media Temp:

Standard; -45° to $+185^{\circ}$ F
(-43° C to $+85^{\circ}$ C)

Special; -60° F to $+350^{\circ}$ F
(-51° C to $+177^{\circ}$ C)

Maximum Operating Pressure Differential:

Standard, Vacuum to 225 PSI
Special to 650 PSI

Burst Pressure: 4000 psi

Leakage: Standard; bubble tight

Vacuum: Special; to 10 microns

ELECTRICAL CHARACTERISTICS:

Coil Voltage: 6 to 460 Volts a-c 50 to 60 cps
6 to 230 Volts d-c

Ambient Temp: Standard; class "A" to $+110^{\circ}$ C
Special; to $+200^{\circ}$ C

Operate Time: 20 to 25 milliseconds

MECHANICAL CHARACTERISTICS:

Material: 303 + 430F stainless steel

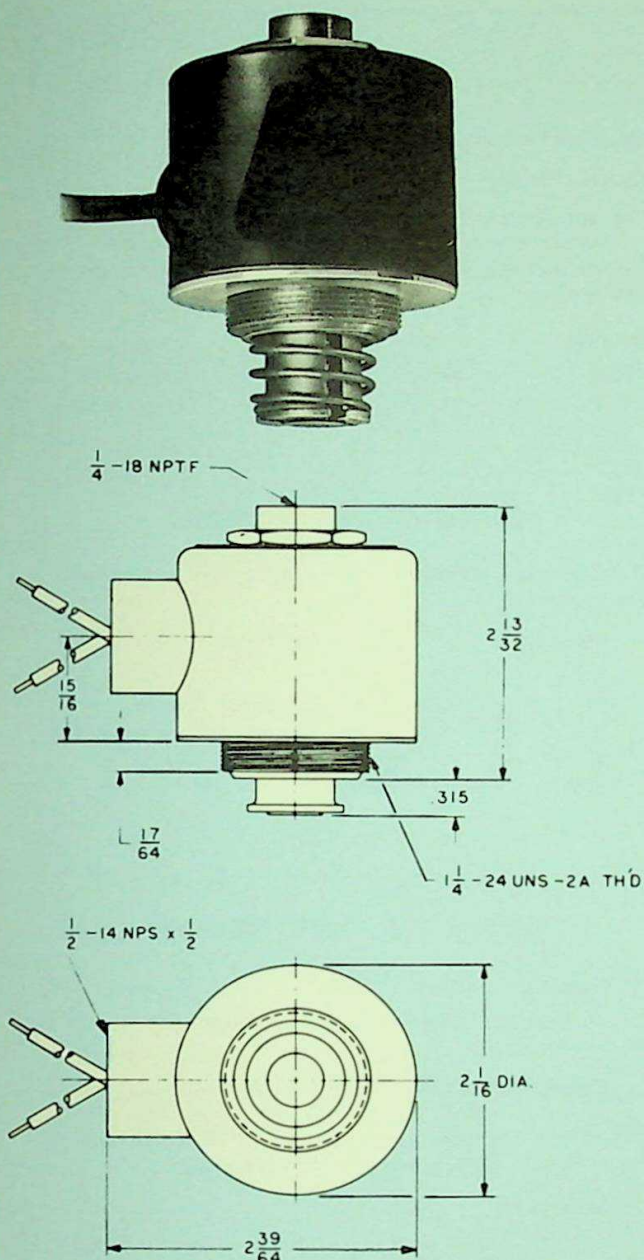
Orifice Diameter: $3/32''$ to $3/16''$ (end stop)

Porting: $1/4''$ NPTF (exh.)

Housing: $1/2$ in. NPS Conduit or Grommet

Compensating Plunger: Standard

Weight: 1 lb. 6 oz. max.



PILOT SYSTEMS SPECIFICATIONS		OPERATING CHARACTERISTICS				SOLENOID OPERATORS			
MAX. OPERATING TYPE 360 NORMALLY CLOSED	PRESSURE DIFF. TYPE 361 NORMALLY OPEN	MAXIMUM ORIFICE DIAMETER	RECOMMENDED PLUNGER LIFT-INCHES	MAXIMUM ORIFICE DIAMETER	AVERAGE OR FACTOR	CATALOG NUMBERS			
						TYPE 360 NORMALLY CLOSED		TYPE 361 NORMALLY OPEN	
AC & DC	AC & DC	INCHES	AC & DC	INCHES		COND.	GROM.	COND.	GROM.
225	225	3/32	.038	3/32	.25	36001	36081	36101	36181
150	175	1/8	.045	1/8	.35	36002	36082	36102	36182
125	125	5/32	.037	5/32	.45	36003	36083	36103	36183
85	75	3/16	.045	3/16	.50	36004	36084	36104	36184
50	50	1/4	.061	3/16	.50	36004	36084	36104	36184
25	40	5/16	.077	3/16	.50	36004	36084	36104	36184
15	30	3/8	.092	3/16	.50	36004	36084	36104	36184



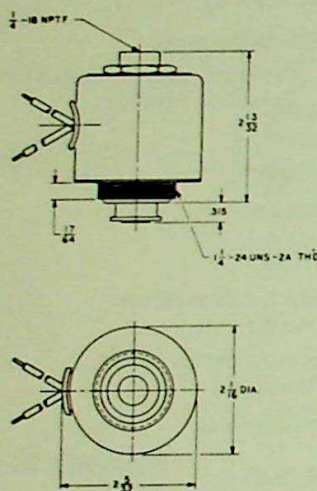
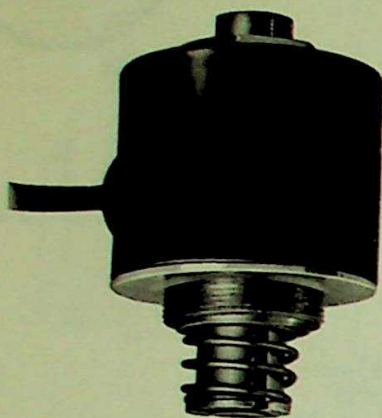
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TYPE 360 & 361

3-WAY NORMALLY-CLOSED
OR
3-WAY NORMALLY-OPEN
GROMMET HOUSING



COIL DATA

Continuous Duty:

Type	Max. Total Coil Temp.	Max. Ambient Temp.
Class "A" (Standard)	110°C	25°C
Class "B" (Waterproof)	120°C	35°C
Class "H" (Vacuum Impregnated)	180°C	95°C

Intermittent Duty

Available in class A, B & H
Maximum "on" and minimum "off" time, maximum
media and ambient temperatures must be specified
when intermittent duty coils are required.

Ampere Ratings: (For std. class "A" coils)

AC Volts	Amperes	AC Volts	Amperes
6	6.000	120	0.300
12	3.000	240	0.150
24	1.500	480	0.075
48	0.750		

Nominal Power: 17 watts continuous duty

Current Drain:

Current of standard 120 volt 60 cps coil:

Inrush .460 amps Holding 0.300 amps
Inrush and Holding current of standard 110 volt d-c
coil .140 amps.

Leads:

All coils are supplied with 24" stripped leads unless
otherwise specified.

OPTIONAL VARIATIONS

The following variations from Standard type operators
are available:

PREFIX	DESCRIPTION COIL
1	Class B Waterproof Coil
2	Class H Vacuum Impregnated Coil
4	Class A 120-240/60 Coil
CR	Rectified Coil
	HOUSING
HR	Strain Relief

ORDERING INSTRUCTIONS

1) Standard Operator:

Specify: Catalog Number, Voltage and
Frequency.

Example: No. 36004 120-VAC 60-cycles
which designates a 3-way normally
closed operator with 3/16 in. exhaust
Orifice and Conduit Housing.

2) Variations:

Add prefixes as listed when ordering
valves with variations.

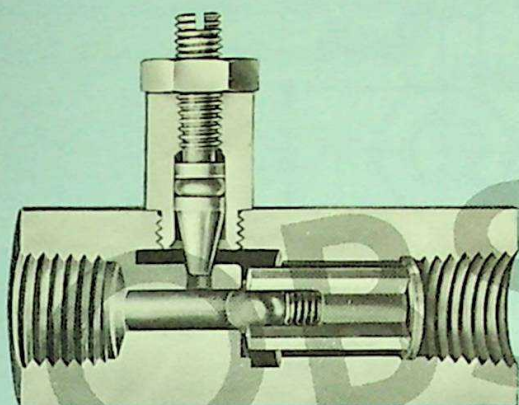
Example: No. 1-36004 120/60
same as example No. 1 except
Waterproof Coil.

Specify vacuum if valves are to be used on VAC.

For Application Assistance, Please Use Questionnaire
on page 91.

FLOW CONTROL and CHECK VALVES

TYPE
"A"
"B"
"C"



"A" SERIES

A-201 Needle Check Valve Cv .93

A-211 Needle Valve Cv .42

A-221 Check Valve Cv .83

Leakage 45CC/min. max.

1/4" NPTF.

Hexagonal Brass Body.

Precise Metering with Safety Stop.

Stainless Steel Ball.

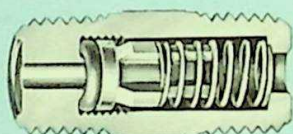
Applicable for Hydraulic & Pneumatic.

Service to 2000 psi operating pressure.

Standard Cracking Pressure 5 psig.

Burst pressure 10,000 psi.

Not sensitive to mechanical shock or vibration.



"B" SERIES

B-101 Check Nipple Valve 1/8" NPTF Cv .20

B-201 Check Nipple Valve 1/4" NPTF Cv .47

B-301 Check Nipple Valve 3/8" NPTF Cv .76

Hexagonal Brass Body.

NPTF male threads.

Standard Cracking Pressure 2 psig.

Burst Pressure 10,000 psi.

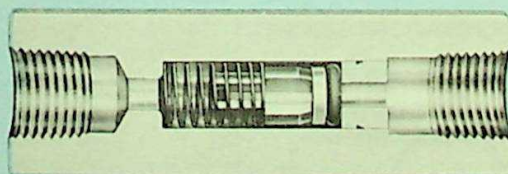
Applicable for Hydraulic & Pneumatic.

Service to 2000 psi operating pressure.

Resilient O-Ring seal.

Zero Leakage.

Not sensitive to mechanical shock or vibration.



"C" SERIES

C-101 Check Coupling Valve 1/8" NPTF Cv .20

C-201 Check Coupling Valve 1/4" NPTF Cv .47

C-301 Check Coupling Valve 3/8" NPTF Cv .76

Hexagonal Brass Body.

NPTF female threads.

Standard Cracking Pressure 2 psig.

Burst Pressure 15,000 psi.

Applicable for Hydraulic & Pneumatic.

Service to 2000 psi operating pressure.

Resilient O-Ring seal.

Zero Leakage.

Not sensitive to mechanical shock or vibration.

All "B" and "C" Series valves are suitable for
-45°F. to +185°F. Resilient seating materials are available
for higher and lower temperatures.



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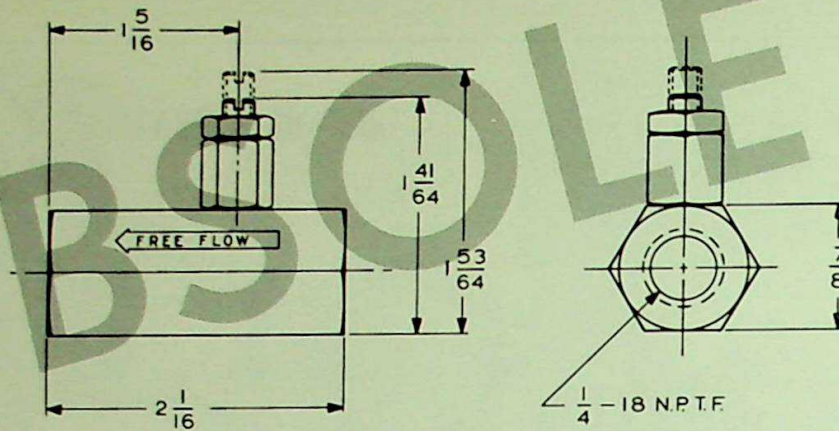
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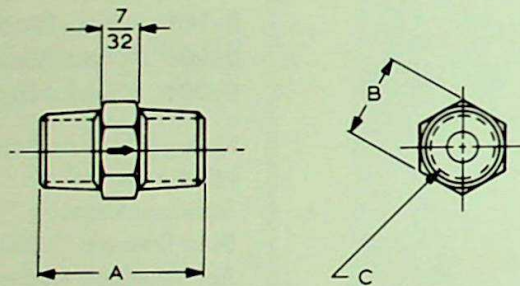
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"A" SERIES

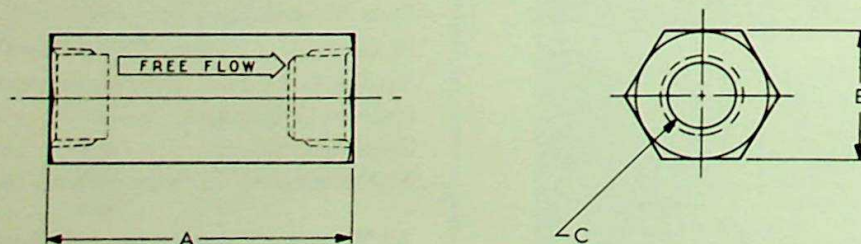


"B" SERIES



PART NO	A-DIMEN	B-DIMEN	C-DIMEN
B-101	31/32	7/16	1/8 NPTF
B-201	1 5/32	9/16	1/4 NPTF
B-301	1 5/16	11/16	3/8 NPTF

"C" SERIES



PART NO	A-DIMEN	B-DIMEN	C-DIMEN
C-101	2 1/16	5/8 HEX	1/8 NPTF
C-201	2 1/16	11/16 HEX	1/4 NPTF
C-301	2 3/8	7/8 HEX	3/8 NPTF

OPTIONAL FEATURES

VARIATIONS

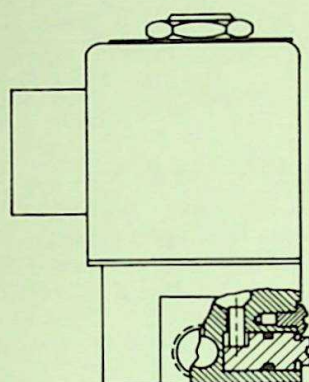
Refer to catalog sheet for applicable valve variations and ordering instructions.

Indicated below are all variations which make a significant change in valve dimensions or application.

Coils: refer to specific catalog sheet.

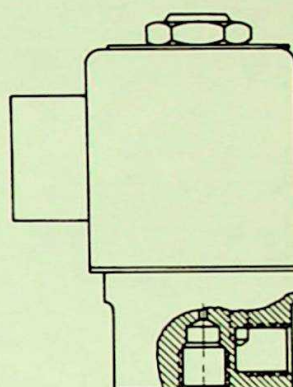
Brass Body: Prefix BB identical to stainless steel body dimensionally but restricted to applications where brass is compatible with media.

BODIES



**PREFIX BC:
MANUAL OVERRIDE**

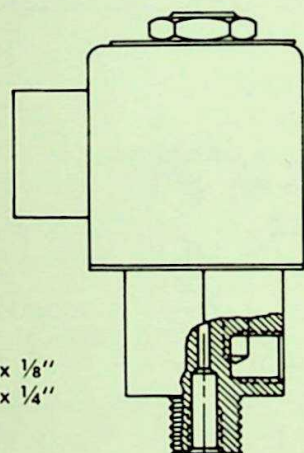
For applications requiring a provision for manually operating valve in emergency situations.



**PREFIX BD:
BOTTOM OUTLET**

**PREFIX BE
BOTTOM INLET**

For applications requiring a 90° change in flow direction at the valve with a bottom inlet or outlet port that permits more desirable valve positioning.



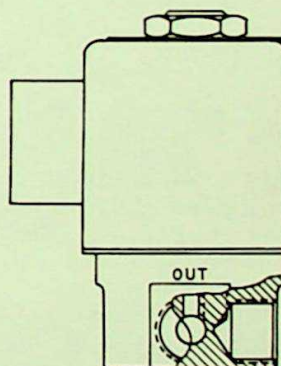
**PREFIX BH:
HEXAGONAL BODY**

For applications requiring mounting of valve on fixtures (such as cylinders). Attachment is simplified by hexagonal body.

Include port sizes.

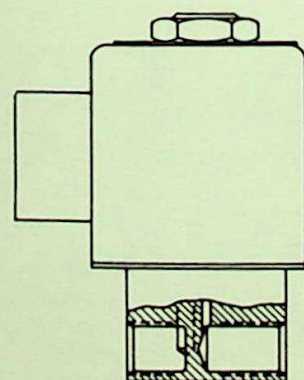
$\frac{1}{8}'' \times \frac{1}{4}''$

$\frac{1}{4}'' \times \frac{1}{8}''$
 $\frac{1}{8}'' \times \frac{1}{4}''$



**PREFIX BL:
PORTING, 90° LEFT**

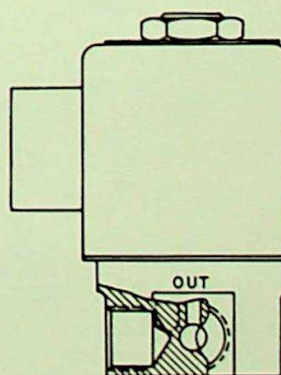
For applications requiring a 90° change in flow direction to the left of inlet with side porting.



**PREFIX BM:
BRASS MINIATURE BODY**

**PREFIX BX
STAINLESS STEEL
MINIATURE BODY**

For applications requiring lower cost and a more compact body without reduction of pressure and flow ratings.



**PREFIX BR:
PORTING 90° RIGHT**

For applications requiring a 90° change in flow direct to the right of inlet with side porting.

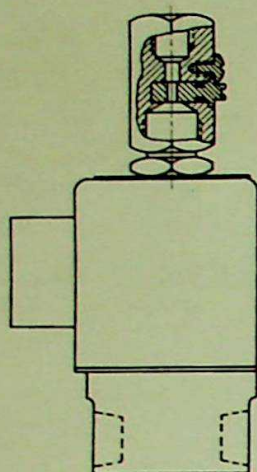


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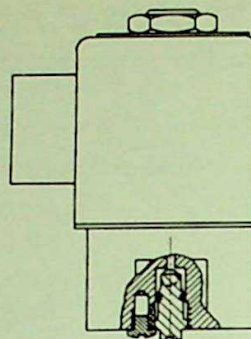
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METERING



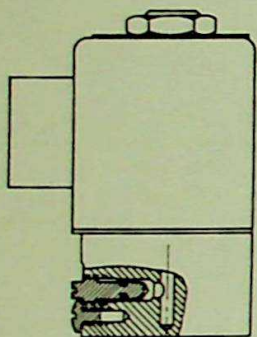
PREFIX MA: METERING ADAPTER

For applications requiring variable metering of flow through the line-connecting adapter.



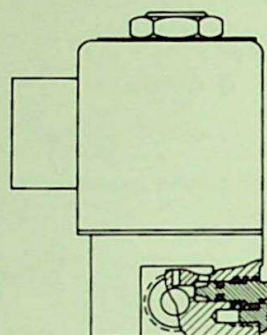
PREFIX MB: METERING BOTTOM

For applications requiring variable metering with adjusting screw located at bottom of body. Up to approx. 100% metering for orifice sizes from $\frac{3}{64}$ to $\frac{5}{32}$ inch.



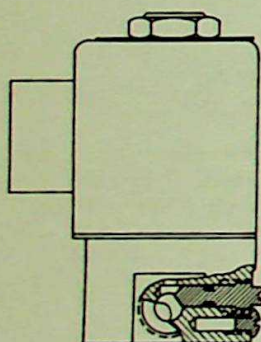
PREFIX MF: METERING, SIDE 45°

For applications requiring variable metering with adjustment screw located at side of body, 45° from outlet port. Up to approx. 100% metering for orifice sizes from $\frac{3}{64}$ to $\frac{1}{8}$ inch.



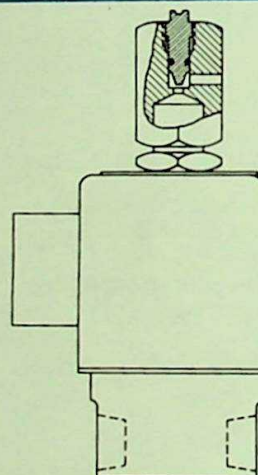
PREFIX MP: METERING BY-PASS

For applications requiring variable metering (approx. 100%) of a continuous partial flow through valve when energized or de-energized. Available in orifice sizes from $\frac{3}{64}$ to $\frac{1}{4}$ inch.



PREFIX MS: METERING, SIDE 90°

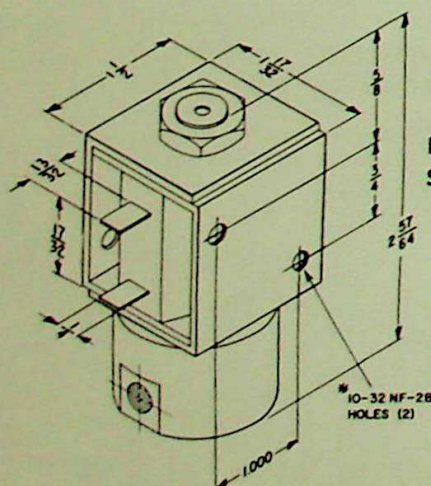
For applications requiring variable metering with adjustment screw located at side of body 90° from inlet port. Up to approx. 90% metering. For orifice sizes from $\frac{3}{64}$ to $\frac{1}{4}$ inch.



PREFIX MV: METERING ADAPTER, FREE-VENTING

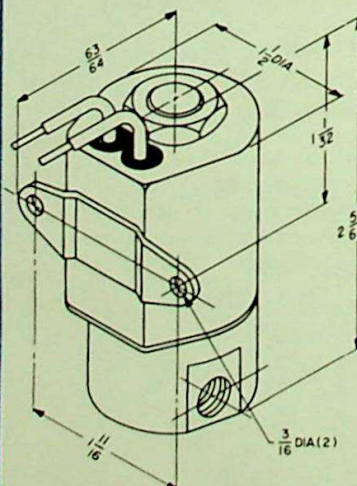
For applications requiring variable metering of line connecting adapter with exhaust to atmosphere. Up to approx. 100% metering for orifice sizes from $\frac{3}{64}$ to $\frac{3}{32}$ inch.

HOUSINGS



PREFIX HB STRAP HOUSING

For applications requiring a compact valve at low cost. Features cooler operation with spade connectors for quick installation.



PREFIX HS: HOUSING BRACKET

For applications requiring a means of supporting the grommet type housing by other than the body mounting or media piping system.

Adapter: Hexagonal-shaped part designed to facilitate attaching pipe systems to port on 2 and 3-way N.O. and 3-way N.C. valve. Available for 1/8 or 1/4 inch (NPT).

Ambient Temperature: Temperature of media surrounding external surface of valve.

Ampere Rating: Current drain when valve is energized.

Burst Pressure: The pressure differential between internal and external surfaces of valve which will cause the parts to exceed their ultimate limits.

Cv Factor: A non-dimensional coefficient of flow. Refer to flow charts pages 52 and 53

Coil Class Rating: Underwriter Laboratory requirements for construction and operating temperatures.

Coil Voltage: Voltage at which coil must be energized if valve is to perform as stated.

Continuous Duty: Valves rated for continuous duty are designed to operate energized indefinitely.

Cushion Action: The cushion action valve eliminates line shock and abrupt stops and starts of hydraulic devices caused by rapid valve action.

Differential Pressure: Pressure differences between inlet and outlet lines of valve.

Directional Control: Type of valve whose function normally is to divert a flow of media from one inlet line to one of two outlet lines.

Disc: An integral part of the plunger which when seated prevents flow through the orifice. On standard valves a resilient Buna-N disc is used. It seals against a smooth rounded orifice to give bubble tight sealing and long life with most media. For high temperature or corrosive media, special seals are available (see Page 50).

Energized: Refers to operating characteristics of the valve when rated voltage is applied.

Explosionproof Housing: A functional electrical coil enclosure for use in explosive atmospheres where any spark or arcing in valve coil area must be isolated from surrounding atmosphere. The following types are available.

SERVICE	NEMA RATING	U. L. RATING
Gasoline and Vapors	VII	Hazardous Location Class I Grp. D
Coke and Coal Dust	IX	Hazardous Location Class II Grp. F
Grain Dust	IX	Hazardous Location Class II Grp. G
Metal Dust	IXA	Hazardous Location Class II Grp. E

Free Venting: A normally-closed valve of 3-way design that exhausts down stream line (outlet) to atmosphere when valve is unenergized. Venting port cannot be connected to piping.

Housing: A functional electrical enclosure designed to protect the coil and supply a path for the magnetic flux. Conduit type housings conform to NEMA I and U.L. "general purpose safety valves" specifications.

Intermittent Duty: This refers to specially-wound high power coils which may be utilized to increase maximum pressure ratings of most valves when continuous duty service is not required.

Leads: All coil leads are standard wire 24" long having insulation material conforming to U.L. requirements for particular classification, unless otherwise stated.

Leakage: All standard valves are bubble tight. No leakage will occur when valve is subjected to compressed air at rated pressure and standard visual means of leak detection are used. Valves are available for high vacuum applications with no leakage at 1 micron.

Maximum Coil Temperature: The highest continuous internal temperature coil material can withstand.

Media: The gas or liquid controlled by the valve.

Media Temperature Range: The listed extreme temperatures which can be handled by a valve without any adverse effect on the parts.

Metering: Regulates the flow of media over a specified range by placing an adjustable restriction in the media path.

Normally Closed: A normally-closed valve is one which prevents flow from the media supply when the valve is unenergized. Energizing valve permits flow.

Normally Open: A normally-open valve is one which permits flow from the media supply when the valve is unenergized. Energizing prevents flow.

Operating Time: This is the time required for the valve to obtain the fully energized position after the voltage is applied to the coil.

Orifice: This is a controlled internal passage diameter in the valve which is the point of sealing. The orifice is one of the determining factors of the pressure and flow capacity of the valve.

Packless Construction: Type of valve design such that special seals are not required on moving parts of the valve and the stem of the valve is not exposed.

Peak Inverse Voltage (PIV): The maximum voltage (including inductive) which may be applied to the coil rectifiers.

Porting: The opening in the valve for attaching external media piping. Generally 1/8 or 1/4 in. NPT thread.

Rectified Coil: A coil assembly which changes applied a-c to an operating d-c voltage. Unique circuitry permits the quietness of d-c operation and pressure ratings in most cases as high as a-c valves.

Solenoid Valve: A valve which utilizes an electromagnetic coil to move an armature (valve stem) in a magnetic field, thereby controlling flow of the fluid.

Time Delay: This is a valve which does not operate until a period of time after the coil has been energized.

Unenergized: Refers to operating characteristics of valve when no voltage is applied to coil.

Weight: The weights stated are for the basic type valve complete with coil.

MEDIA SUITABLE FOR USE WITH ALLIED VALVES

MEDIA CHART

Standard stainless steel valves (with Buna-N resilient seal) generally may be used with water, lubricating oils, gasoline and similar petroleum products, compressed air, inert and industrial gases.

The following chart indicates the serviceability of stainless steel valves for use with various media.

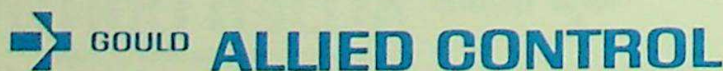
The modifications listed are those necessary if valve is to meet stated service rating.

Rating Symbols

- S — Satisfactory for all general applications
- F — Fair, media may be harmful to valve with prolonged use
- U — Unsatisfactory for use in valves

SERVICEABILITY CHART

MEDIA	RATING	MODIFICATION REQUIRED	MEDIA	RATING	MODIFICATION REQUIRED
Acetic Acid, Glacial	U		Ethyl Alcohol	S	
Acetic Acid, Pure	U		Ethylene Dichloride	F	Viton seal
Acetone	S	Special seal	Ethylene Glycol	S	
Acetylene	S	Silver shading ring	Fatty Acids (Stearic Acid)	S	
Acrylonitrile	S	Silver shading ring and special seal	Freon - 12, 22, 113, 114, 115	S	Special seal
Alcohols	S		Gasoline	S	
Alums	S		Hydrofluoric Acid, 75%	U	
Amyl Acetate	S	Special seal	Hydrofluoric Acid, 48%	U	
Anhydrous Ammonia Gas or liquid (100°F Max.)	S	Silver shading ring	Industrial Gases	S	
Aniline	S	Silver shading ring and special seal	Inert Gases	S	
Benzene	S	Viton seal	JP-4	S	
Boric Acid	S		JP-5	S	
Butadiene (100°F Max.)	S	Viton seal	JP-150		Viton seal
Butyric Acid	S	Special seal	Kerosene	S	
Calcium Chloride	U		Liquid Ammonia	S	Silver shading ring
Carbon Disulphide	S	Viton preferred	Lubricating Oils	S	
Carbon Tetrachloride	F	Special body material preferred	Methyl Ethyl Ketone	S	Special seal
Chlorine Gas (Dry)	F		Naphthalene	S	
Citric Acid (100°F Max.)	S		Nitric Acid, 60%	S	D.C. valves only—Viton seal
Coal-tar Solvents (Benzene, Benzol, Toluol)	S	Viton seal	Nitric Acid Red Fuming	S	D.C. valves only—Viton seal
Cod Liver Oil	S		Petroleum Oil, Crude	S	
Compressed Air	S		Petroleum Products	S	
Copper Sulphate	S		Phosphoric Acid, 60%	F	
Cottonseed Oil	S		Potassium Sulphate	S	
Creosote Oil	S		Sodium Hydroxide, 50%	S	
Cresylic Acid 100%	S		Sodium Hypochlorite, 20%	U	
Distilled Water	S		Sodium Phosphate	S	
Epichlorohydrin	S	Special seal (Viton suitable for limited service)—Silver shading ring preferred	Steam saturated	S	Viton seal
Ether	S		Steam super-heated (low pressure)	S	Viton seal
			Sulphuric Acid, 90%	F	D.C. valves only—Viton seal
			Sulphite Liquors	S	
			Toluene	S	Silver shading ring preferred Viton seal to 75° special above 75°F
			Transmission Fluid Type A	S	
			Vegetable Oils	S	
			Water	S	
			Water Acid, Mine	U	

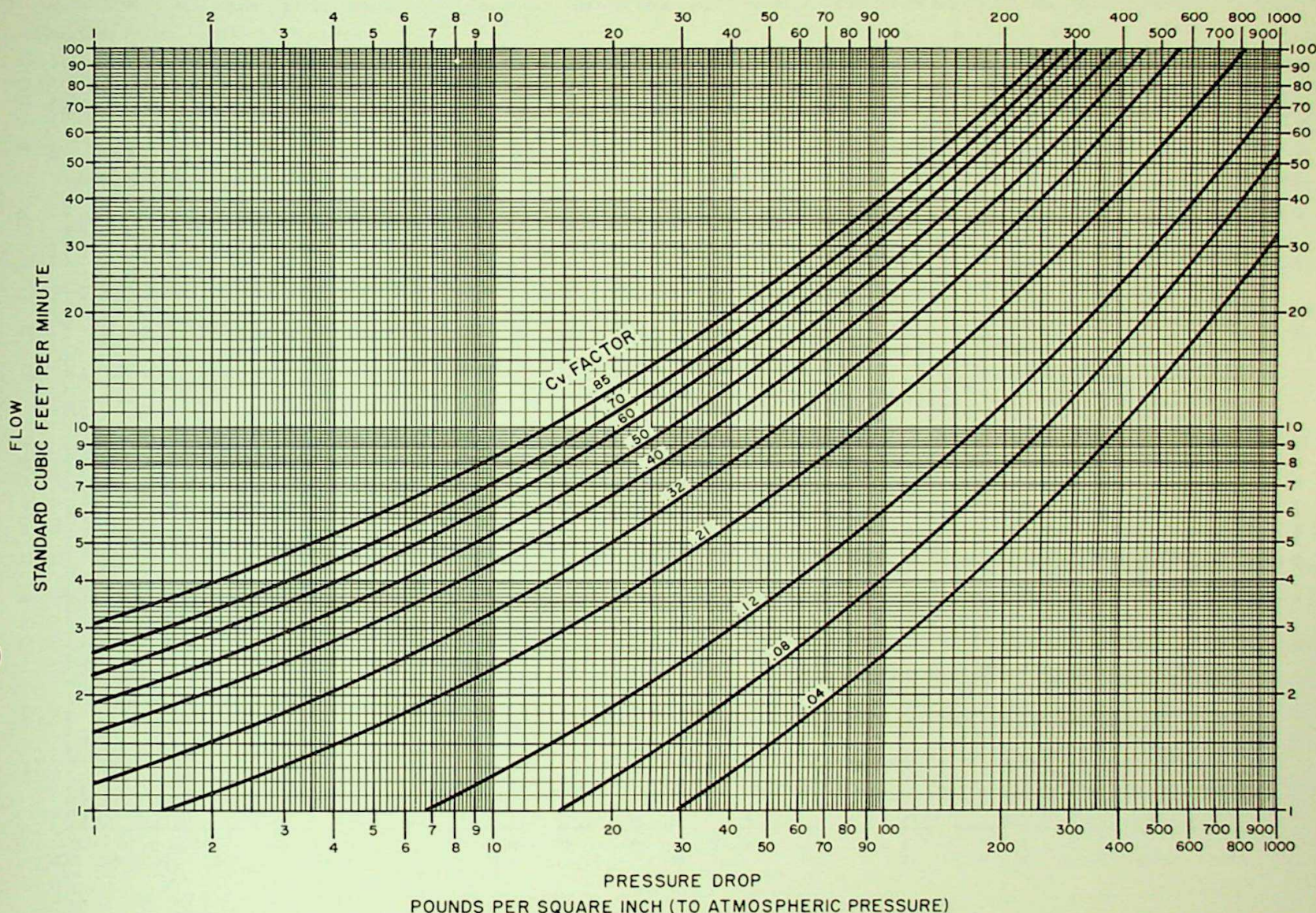


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FLOW DIAGRAM FOR VALVE PERFORMANCE

MEDIA
AIR

BASED ON Cv FACTOR



EXAMPLE NO. 1

Requirement: Two way, Normally Closed Valve, 120 volt, 60 cps • Maximum Pressure: 20 PSI • Minimum Flow: 8 SCFM

Solution: Referring to the graph we find the Cv factor (at the point of intersection of 20 PSI and 8 SCFM) to be 0.50. In checking the Cv factor of the type 203 valve we find that a 5/32 inch diameter orifice is required and the 20 PSI is well within the 90 PSI rating of the valve

EXAMPLE NO. 2

Requirement: Selected valve No. 30393 • Three way, Normally Closed Valve, 120 volt, 60 cps, 3/32 inch diameter orifice, Cv factor inlet 0.21, Cv factor outlet 0.12 • Operating Pressure 90 PSI

Solution: Using the respective Cv factor we find at the intersection of 90 PSI on the graph that the inlet orifice will pass approximately 10 SCFM of air per minute and the outlet orifice approximately 5.6 SCFM

Note: AIR FLOW is measured at +59°F. • If media with different temperature or specific gravity is used, the following formula applies:

$$SCFM = 22.7 C_v \sqrt{\frac{(PD) (PSIA)}{(460 + ^\circ F) (SG)}}$$

Nomenclature:

- SCFM = Standard Cubic Feet per Minute
- PD = Pressure Drop
- PSIA = Inlet Pressure Absolute
- °F = Gas Temperature
- SG = Specific Gravity
- Cv = Flow Coefficient

GOULD ALLIED CONTROL

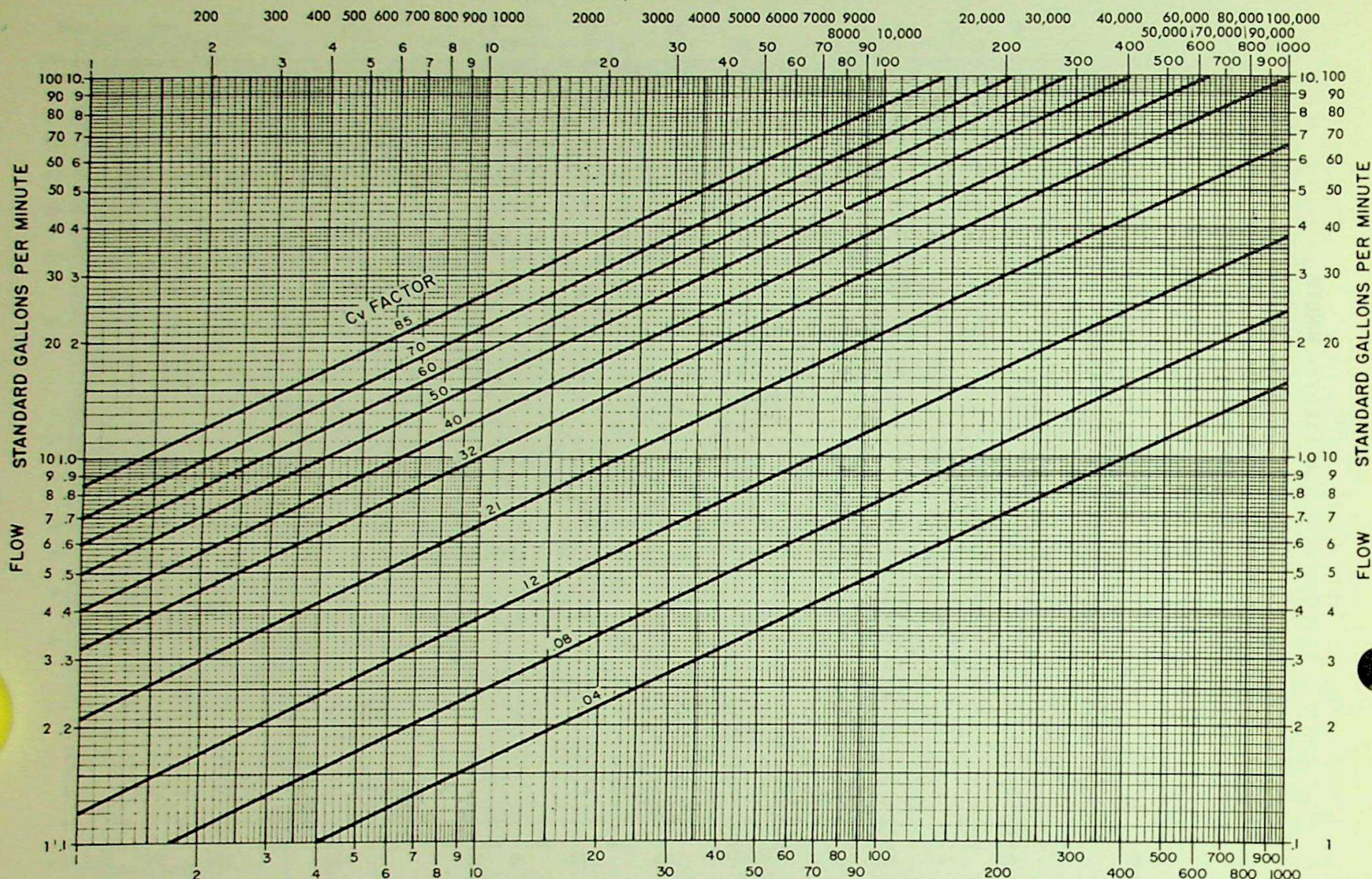
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FLOW DIAGRAM FOR VALVE PERFORMANCE

MEDIA
WATER

BASED ON Cv FACTOR

PRESSURE DROP \ POUNDS PER SQUARE INCH



EXAMPLE NO. 1

Requirement: Two way, Normally Closed Valve, 120 volt, 60 cps • Maximum Pressure: 20 PSI • Minimum Flow: 3.5 GPM

Solution: Referring to the graph we find the Cv factor (at the point of intersection of 20 PSI and 3.5 GPM) to be 0.85. In checking the Cv factor of the type 203 valve we find that a 1/4 inch diameter orifice is required and the 20 PSI is well within the 40 PSI rating of the valve

EXAMPLE NO. 2

Requirement: Selected valve No. 30393 • Three way, Normally Closed Valve, 120 volt, 60 cps, 3/32 inch diameter orifice, Cv factor inlet 0.21, Cv factor outlet 0.12 • Operating Pressure 90 PSI

Solution: Using the respective Cv factor we find at the intersection of 90 PSI on the graph that the inlet orifice will pass 2 GPM and the outlet orifice 1.15 GPM

Note: WATER FLOW is measured at +39.2°F. • If media with a different specific gravity is used, the following formula applies:

$$GPM = Cv \sqrt{\frac{PD}{SG}}$$

Nomenclature: {
 GPM = Gallons per minute
 PD = Pressure Drop
 SG = Specific Gravity
 Cv = Flow Coefficient (GPM with a PD of 1 PSI)

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APPLICATION QUESTIONNAIRE

GENERAL

Customer _____ Date _____

Address _____

Direct correspondence to attention of _____

VALVE CATALOG DATA

2-way: _____ 3-way: _____ 4-way: _____ Other: _____

Normally Closed: (). Normally Open: (). Directional: (). Free Venting: ().

Multi-directional: (). Other: _____

HOUSINGS: Conduit (). Grommet (). Explosion-proof (). JIC (). Strap ().

VARIATIONS: _____

OPERATING REQUIREMENTS

Maximum Operating Pressure Differential: _____ (PSI)

Minimum Operating Pressure Differential: _____ (PSI)

Maximum Flow: _____ GPM. _____ Cu. Ft/Min. _____ Lb/Hr.

Orifice Diameter: _____ inches. Pipe Size: _____ inches.

MEDIUM: _____. Medium Temperature _____ °F. _____ °C.

Ambient Temperature: _____ °F. _____ °C.

Vibration: _____ Cycles _____ Amplitude _____ G's.

System Lubricated: Yes (). No ().

Life Expectancy: _____

ELECTRICAL REQUIREMENTS

OPERATION: A-C _____ volts _____ HZ. _____ D-C _____ volts.

CLASS: "A" _____ "B" _____ "C" _____ "H" _____ Other _____

OPERATING RATE: _____ Cycles/min.

SERVICE: Continuous Duty: _____. Intermittent Duty: _____

Rectified Coil _____. Time Delay Coil _____. Special _____

Max "ON" _____ Sec. _____ Min. _____ Hr.

Min "OFF" _____ Sec. _____ Min. _____ Hr.

Lead Wire Length: _____ inches. Terminals: Stripped _____. Spade Conn _____.

Automotive _____. Other _____.



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